

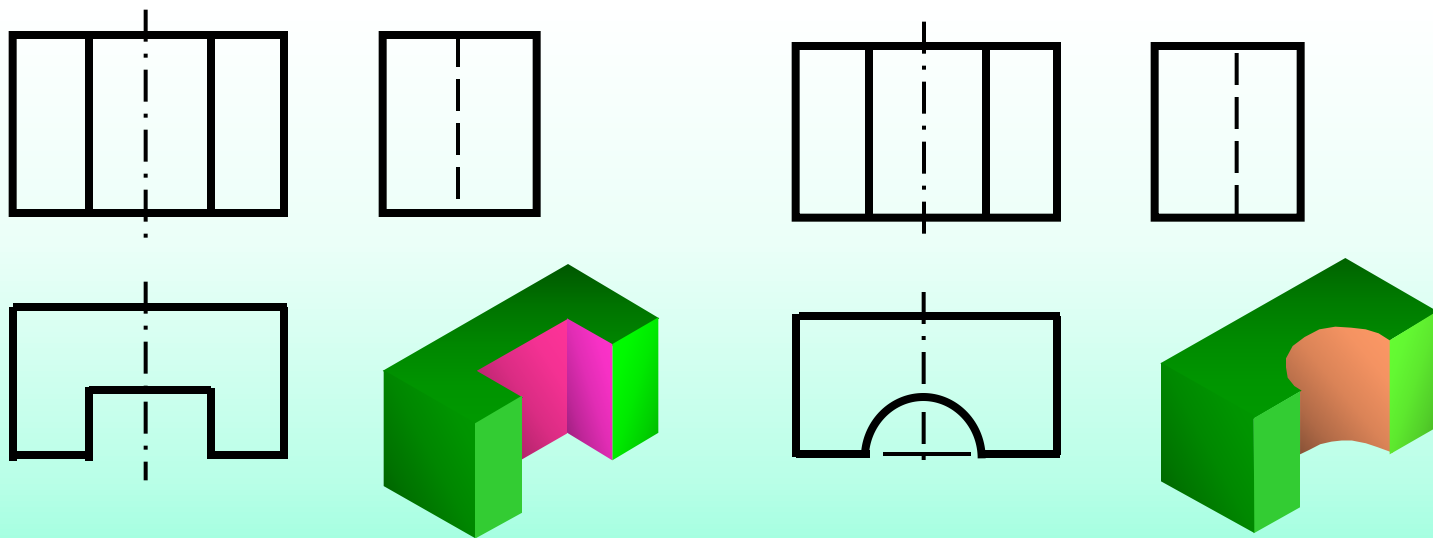
§ 4.5 组合体视图的阅读方法 26

一、看图时需要注意的几个问题

1. 注意抓特征视图

形状特征视图

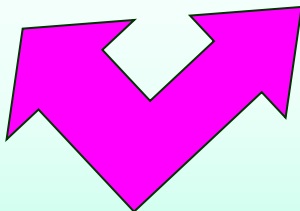
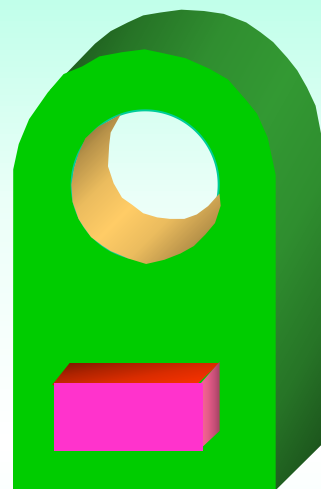
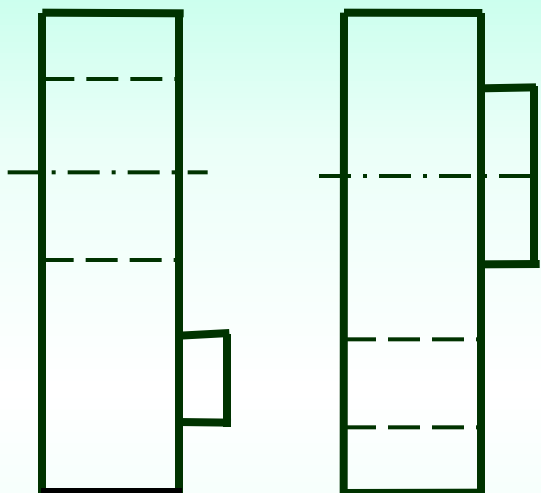
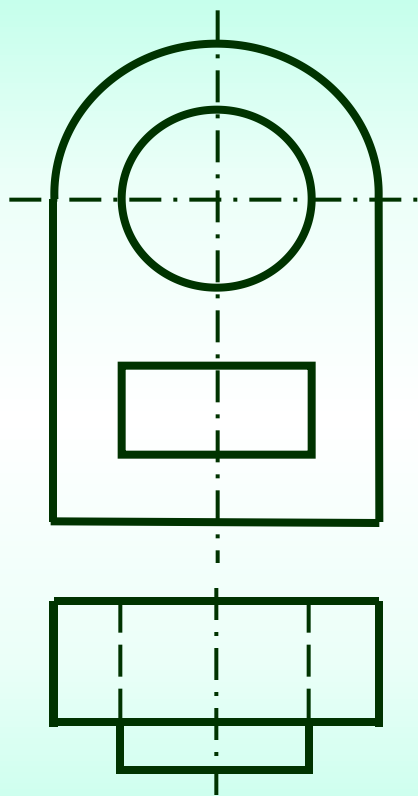
——最能反映物体形状特征的那个视图。



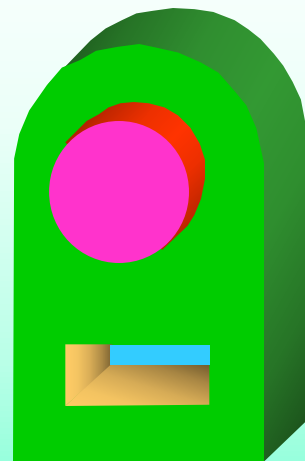
俯视图为形状特征视图

位置特征视图

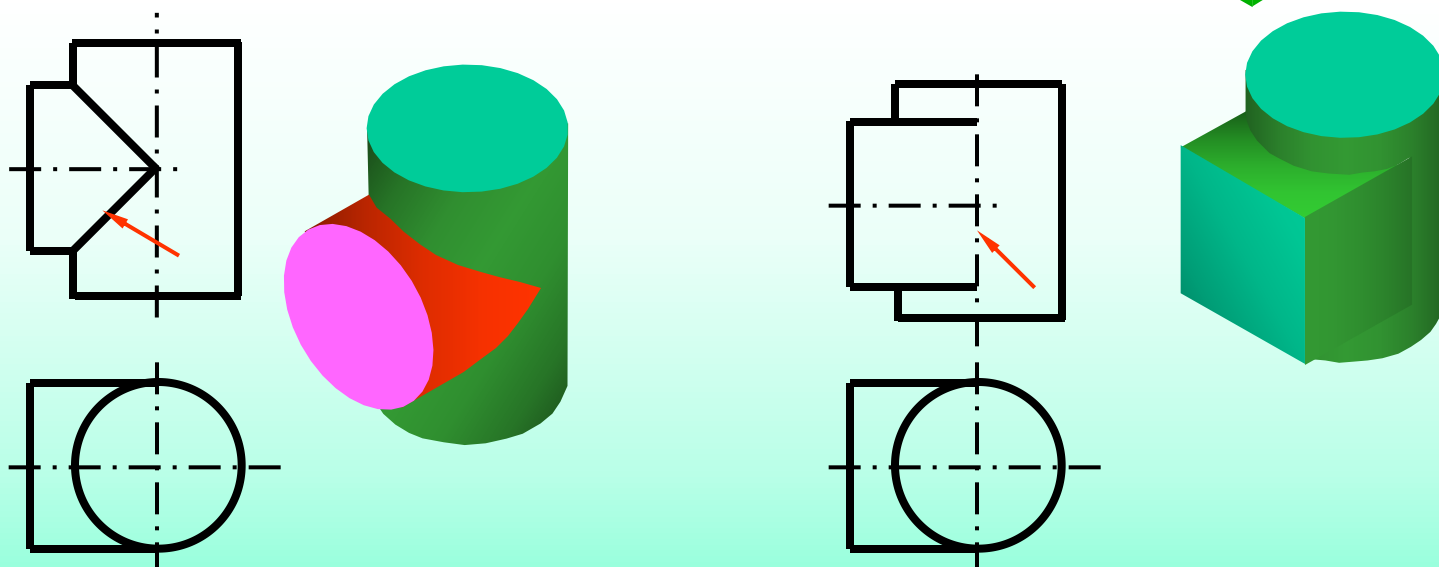
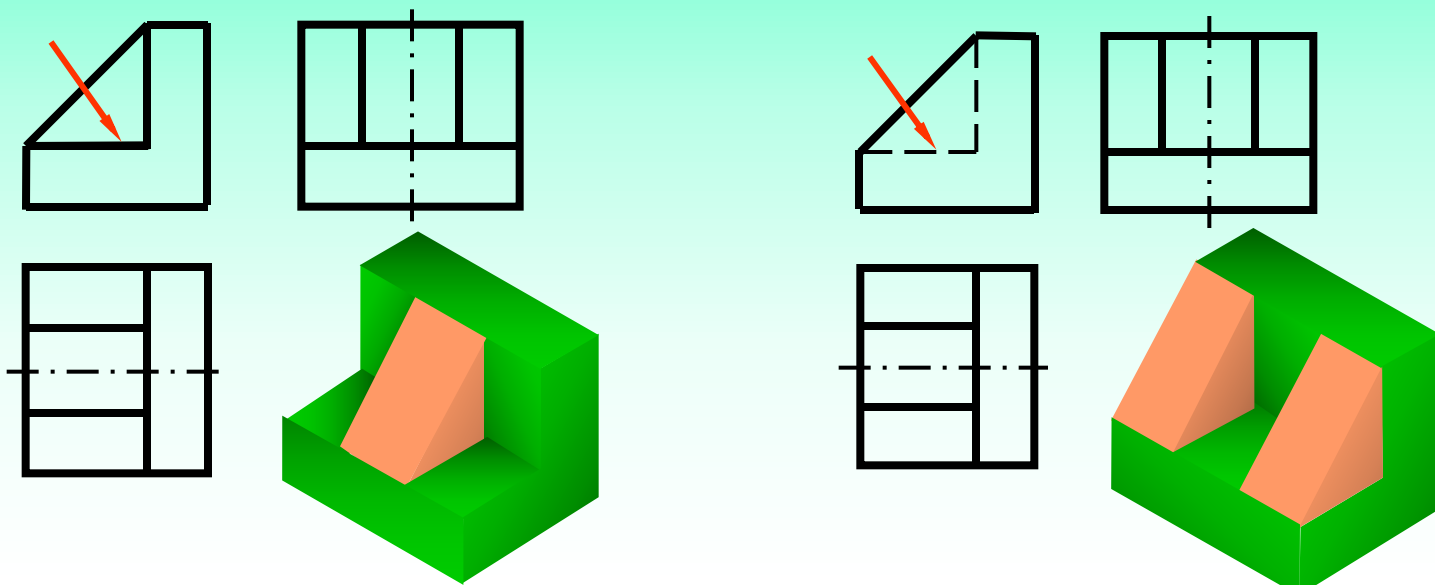
——最能反映物体位置特征的那个视图。



位置特征视图

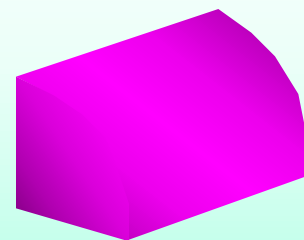
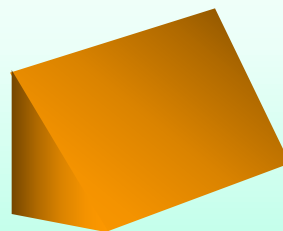
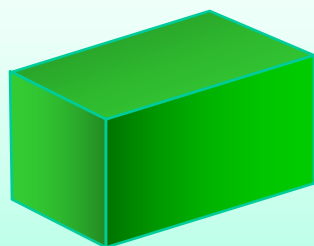
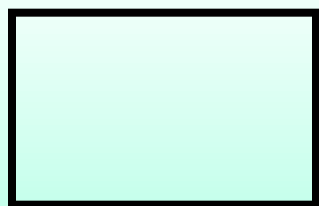
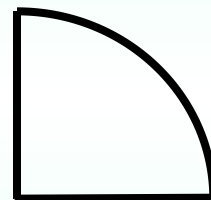
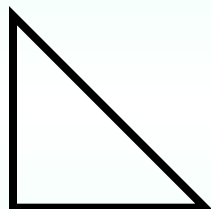


2. 注意反映形体之间连接关系的图线



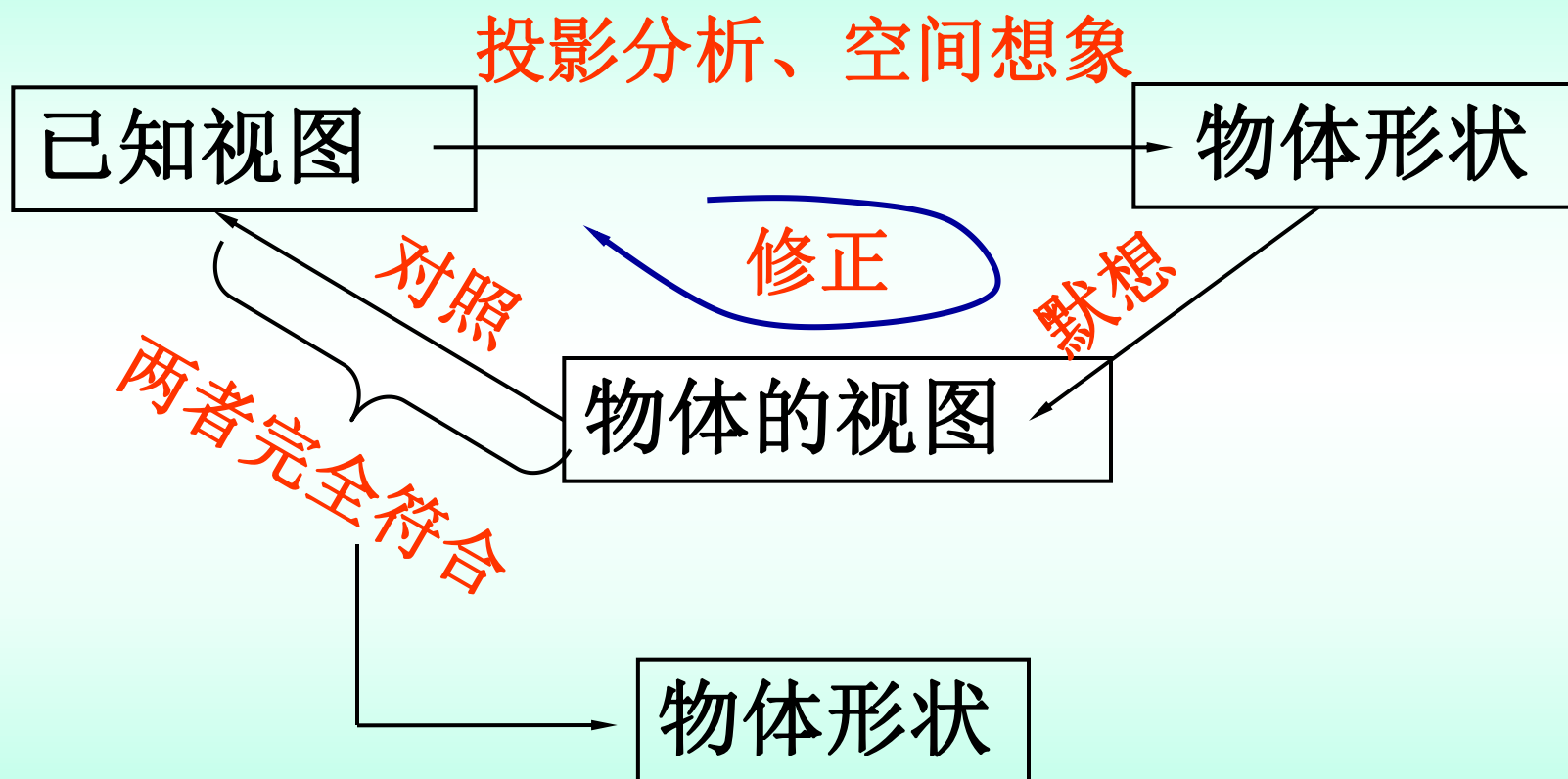
3. 要把几个视图联系起来进行分析

例：



4. 要善于构思空间物体

始终把空间想象和投影分析相结合



二、读图的方法和步骤

看图的基本方法 { 形体分析法
面形分析法

☆ 形体分析法

用“分线框、对投影”的方法分析出组合体由几部分组成，从特征视图入手，想象出各部分的形状、相对位置关系及组合方式，最后综合想象出整体形状。

☆ 面形分析法

用“分线框、对投影”的方法分析物体各表面的形状，从而想象出物体的整体形状。

看图的步骤:

- **抓特征分解形体**

以主视图为主，配合其它视图，找出反映物体特征较多的视图，从图上将物体分解成几部分。

- **对投影确定形体**

利用“三等”关系，划分出每一部分的三个投影，想象出它们的形状。

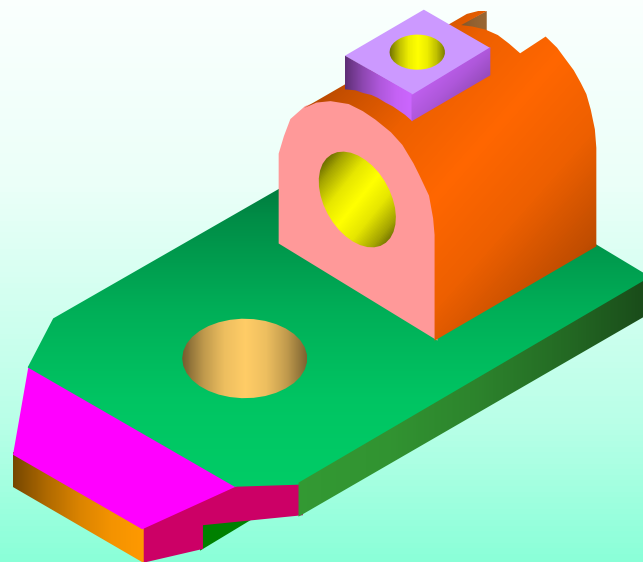
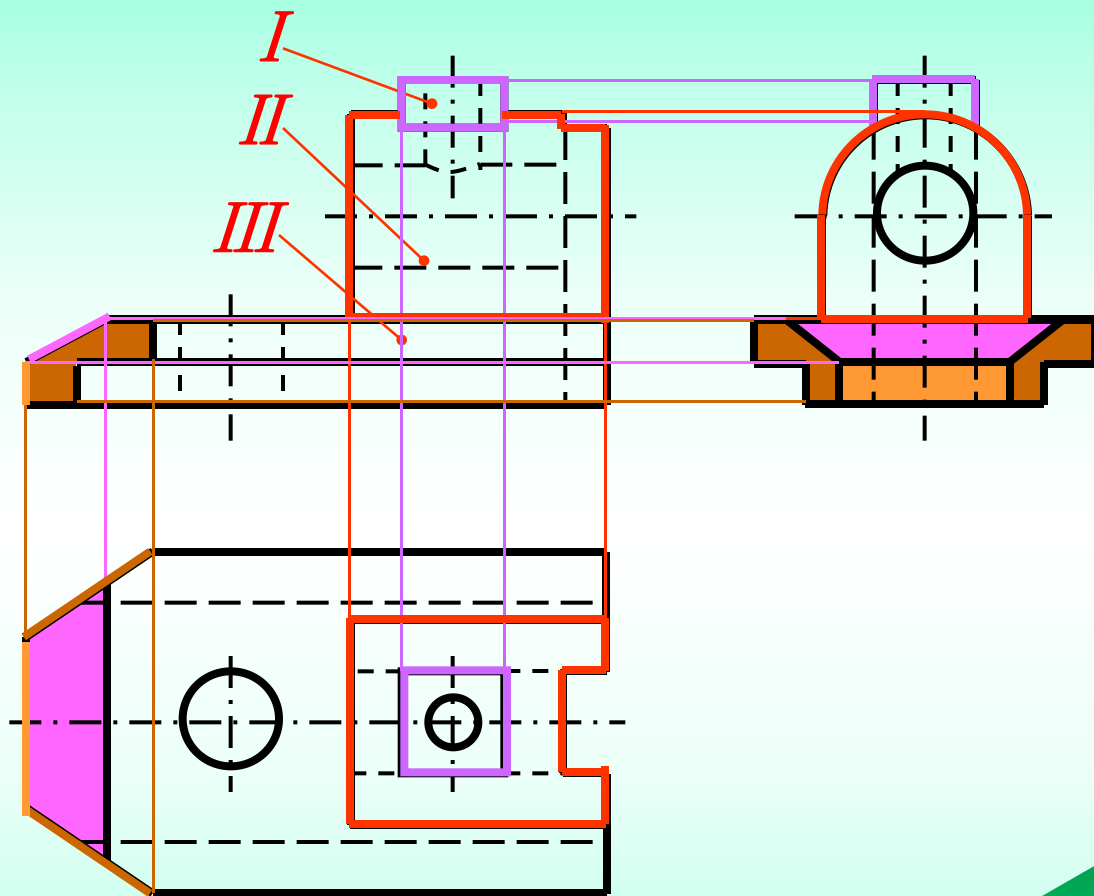
- **面形分析攻难点**

当形体由切割方式形成时，常采用面形分析法对形体主要表面的形状进行分析，进而准确地想象出形体的形状。

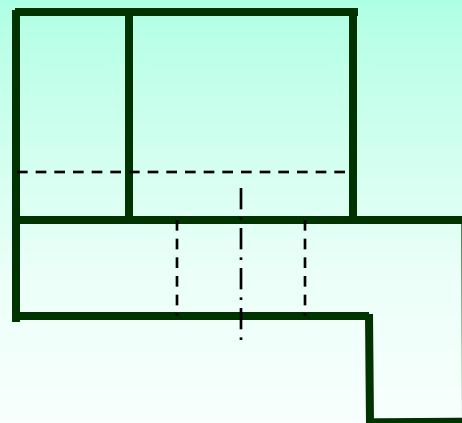
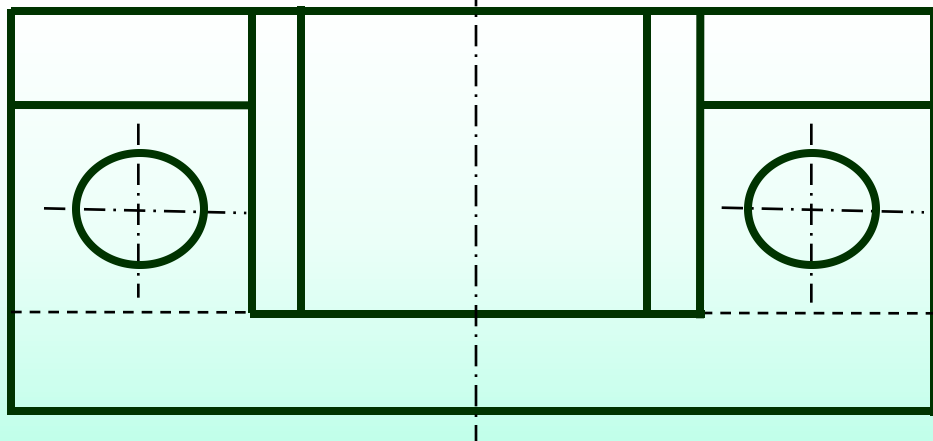
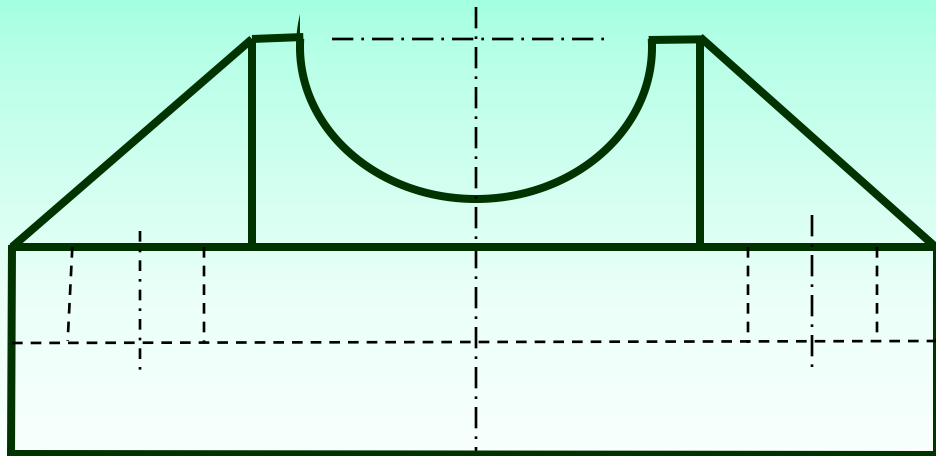
- **综合起来想整体**

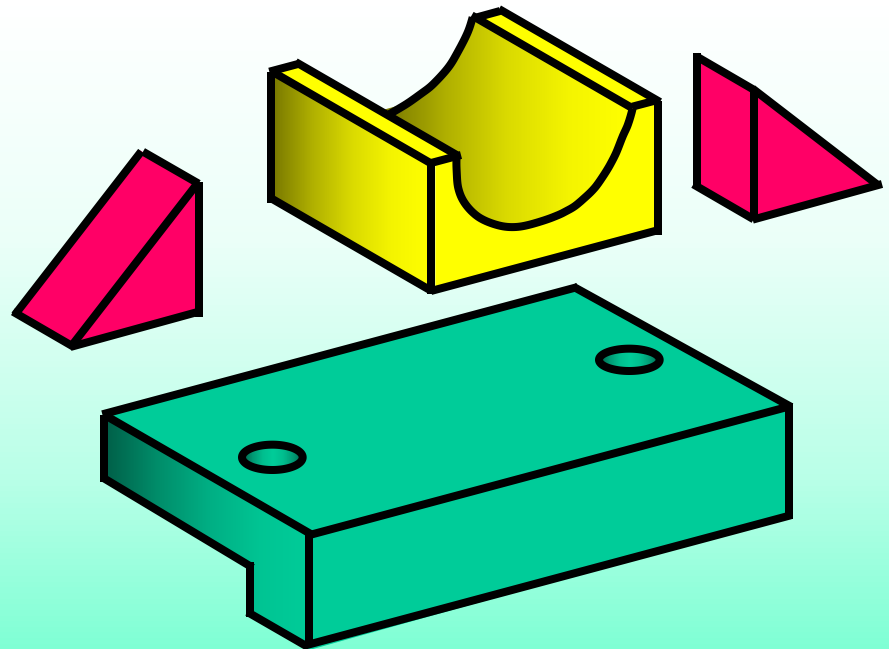
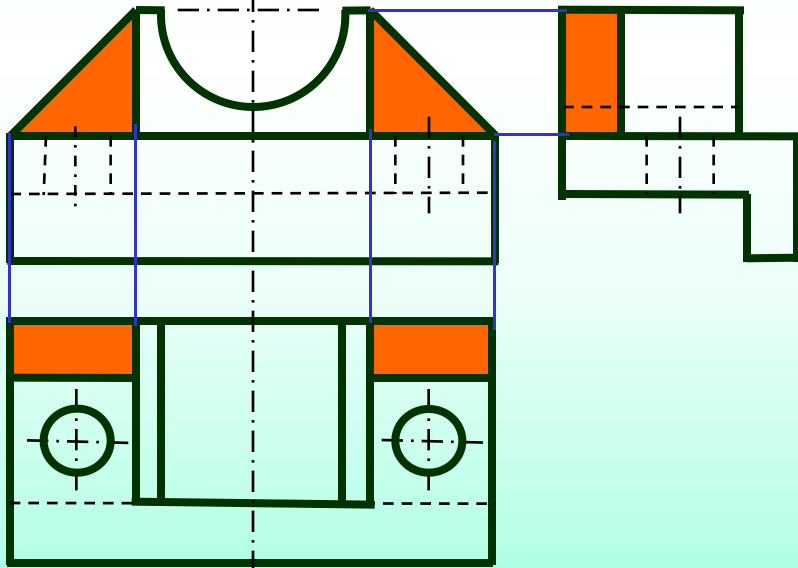
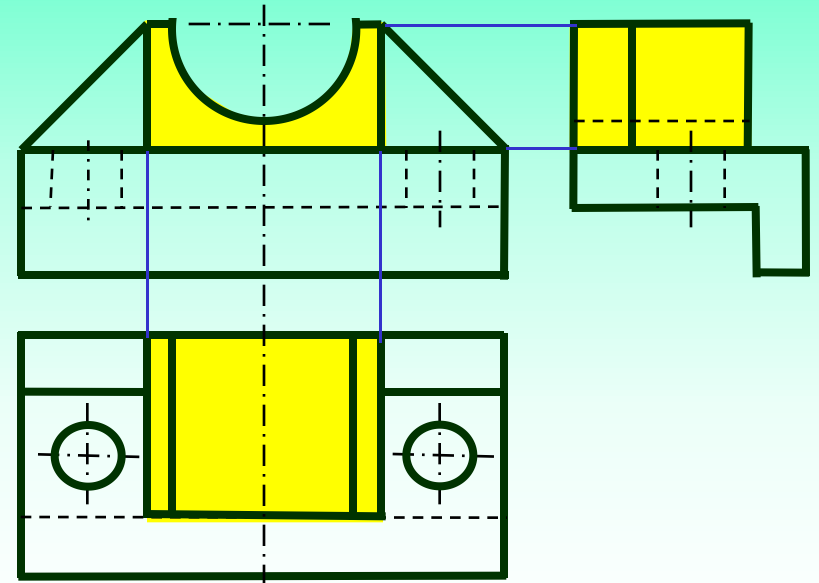
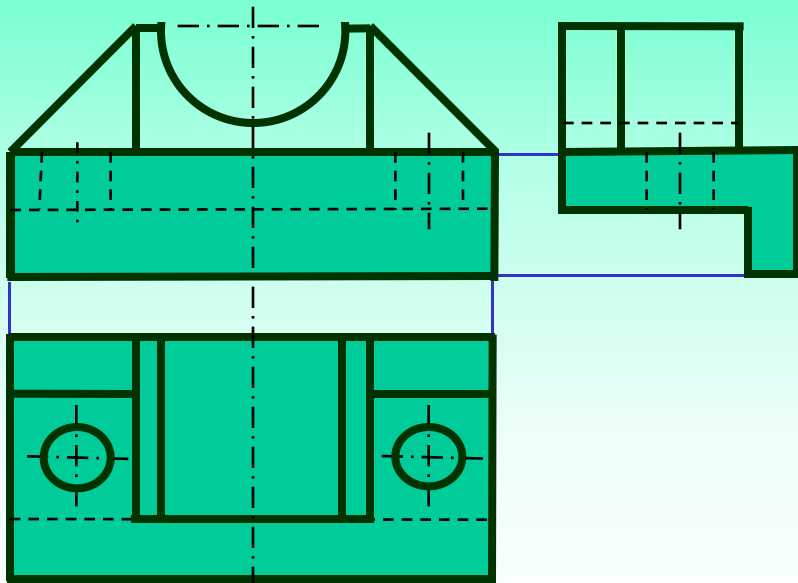
抓住位置特征视图，分析各部分间的相互位置关系，综合起来想象出物体的整体形状。

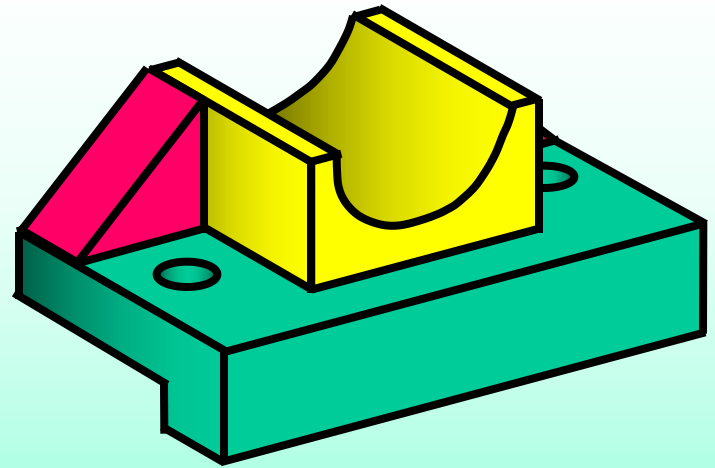
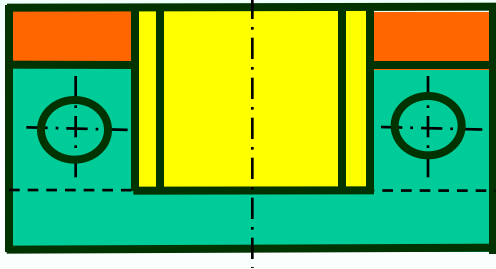
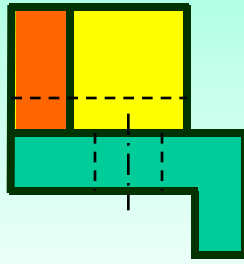
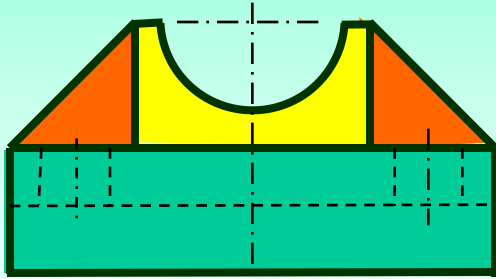
例1：已知物体的三视图，想象出物体的形状



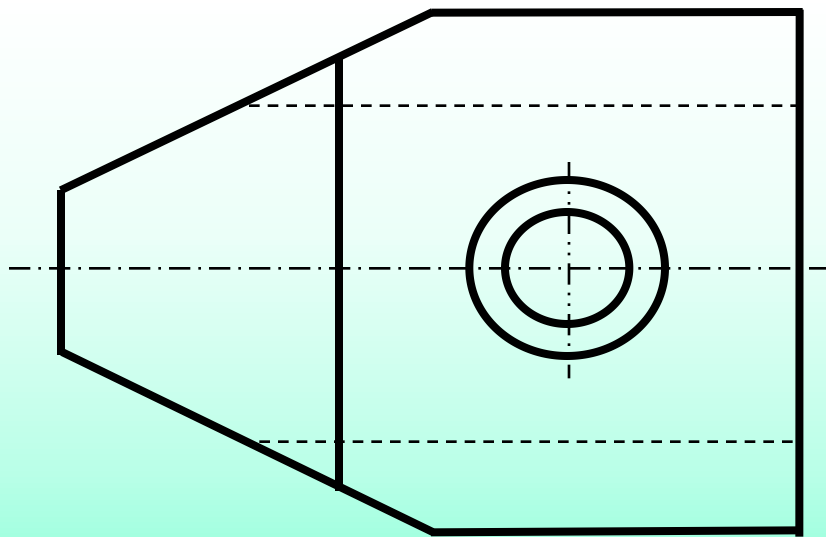
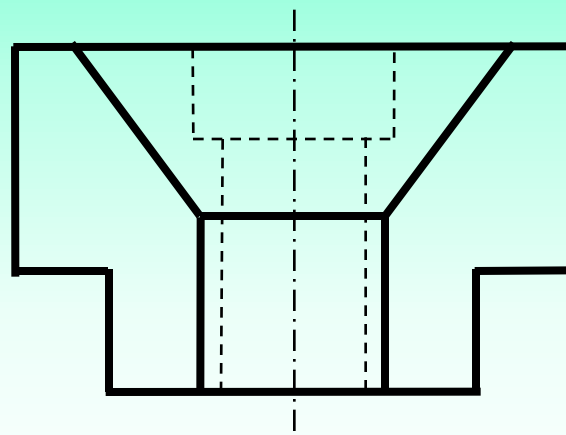
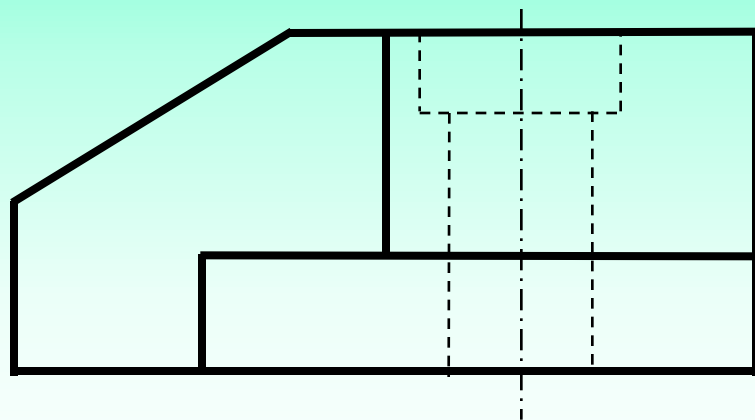
例2:



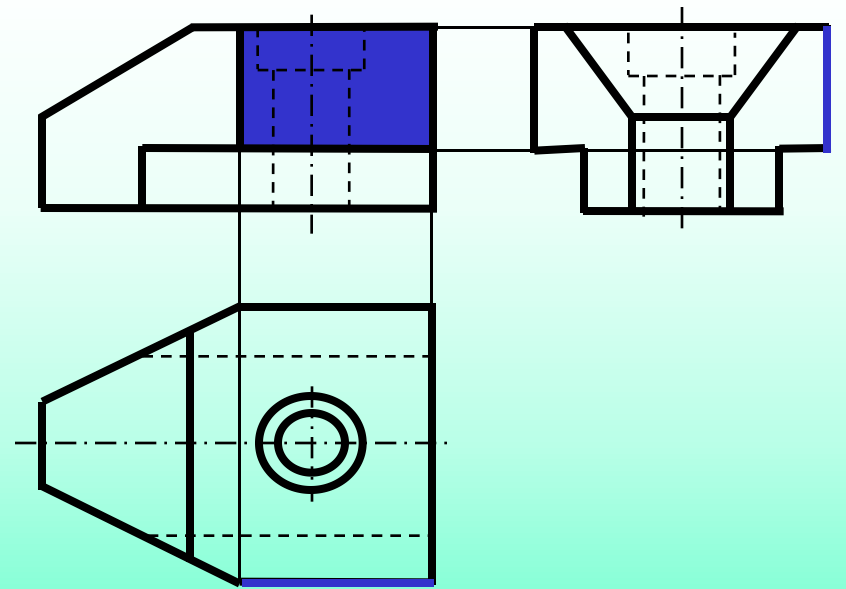
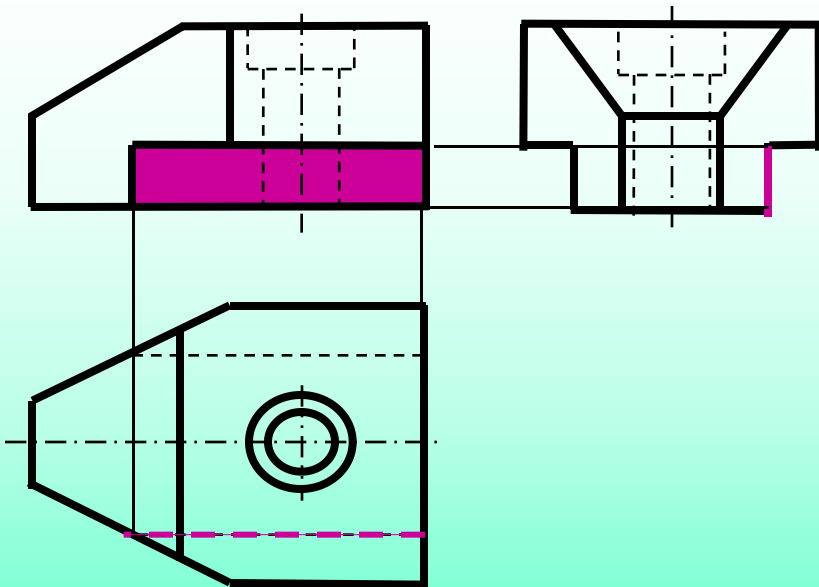
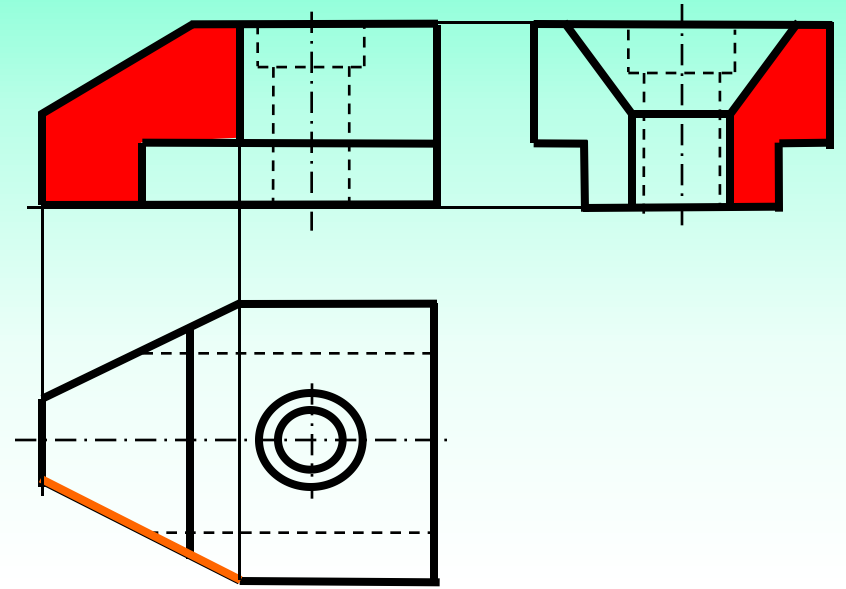
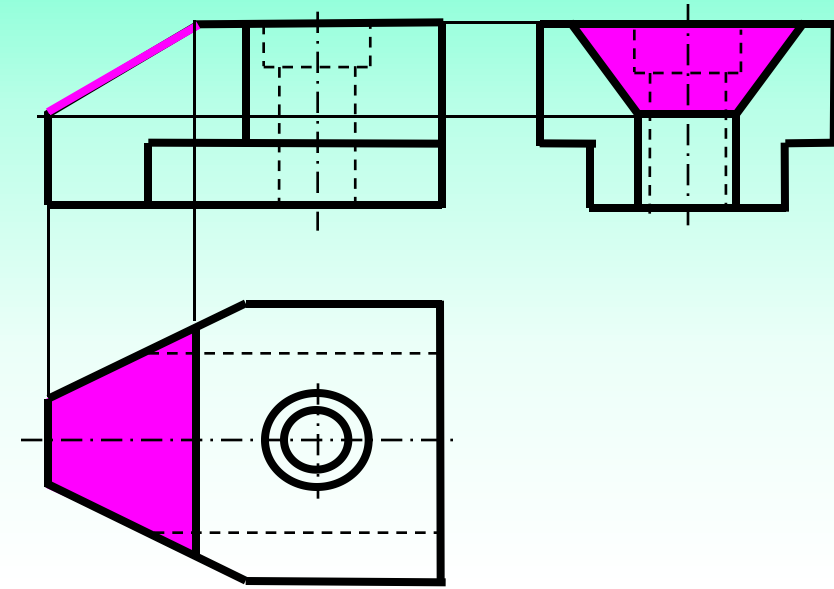


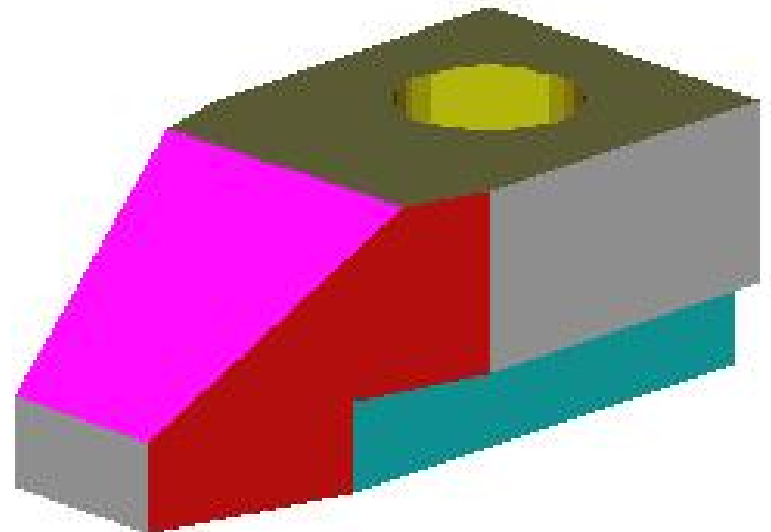
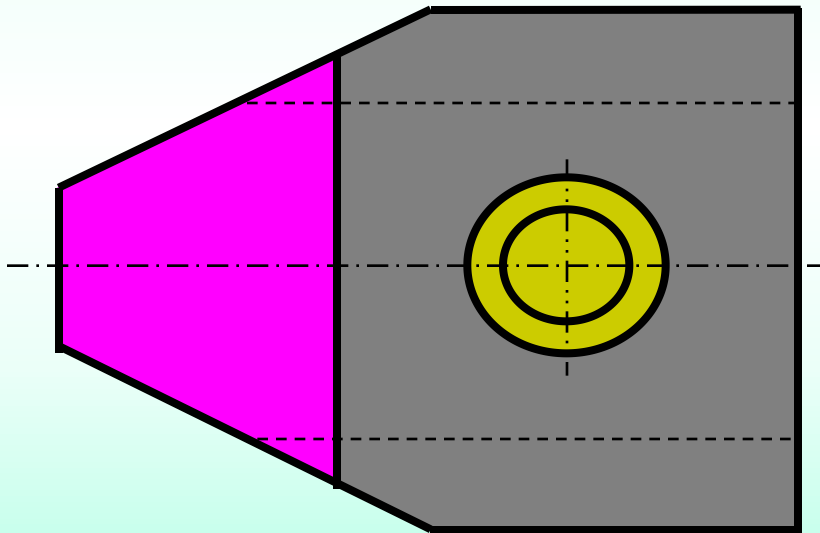
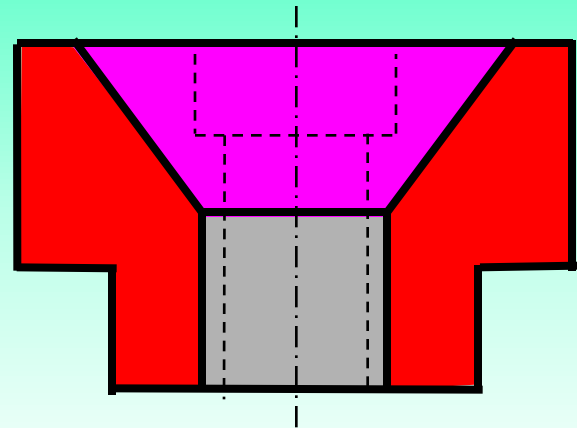
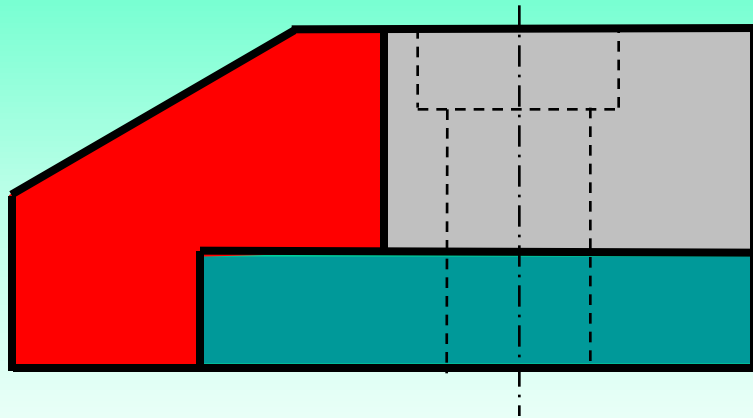


例3:



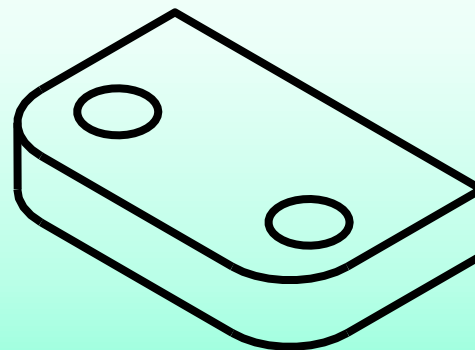
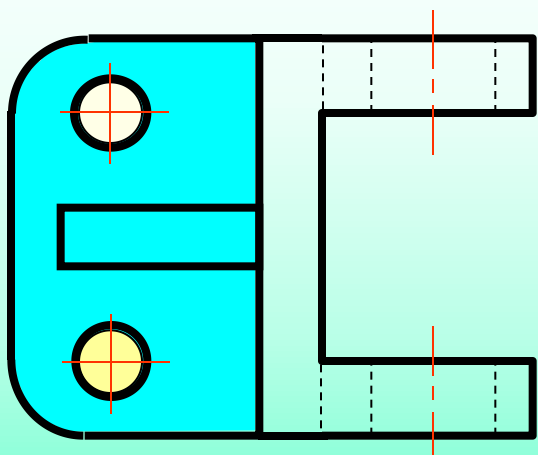
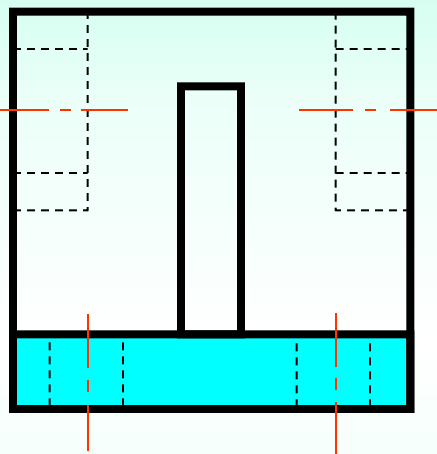
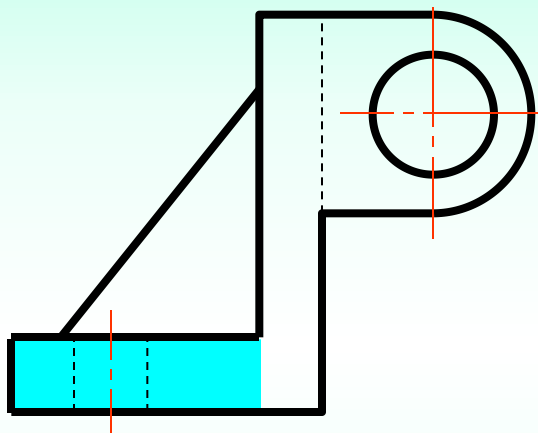
面形分析法



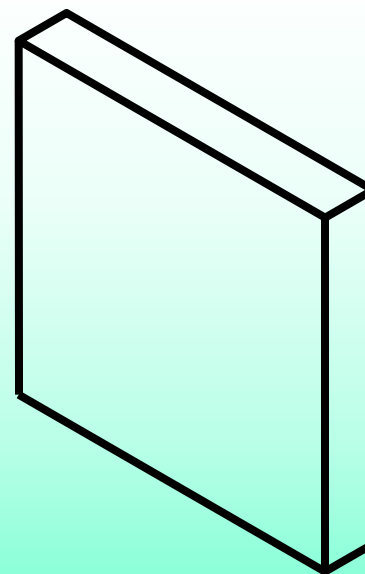
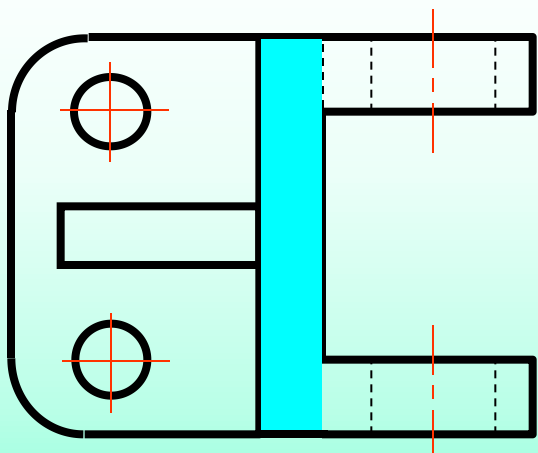
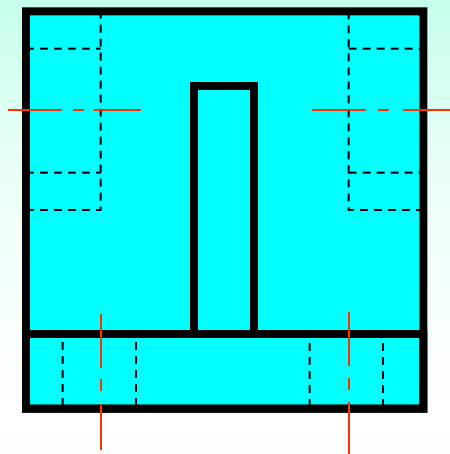
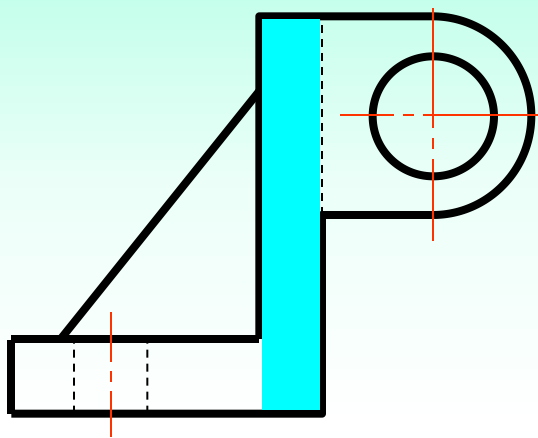


例4：看三视图，想象出集合体的空间形状

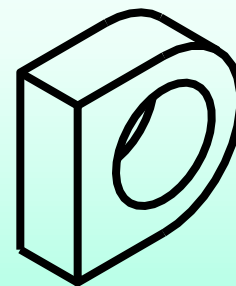
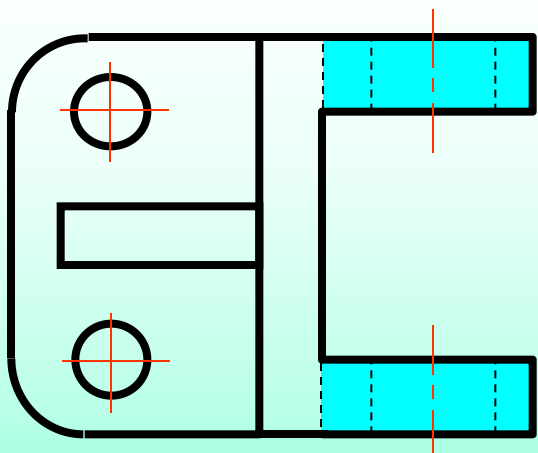
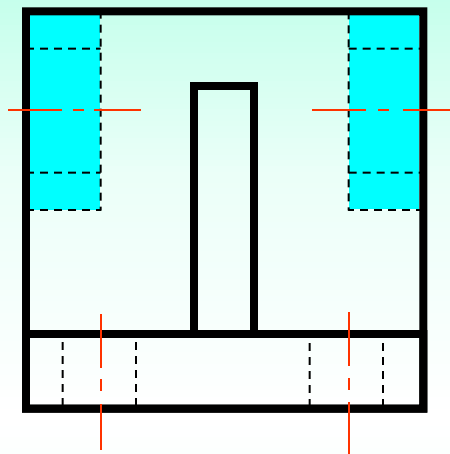
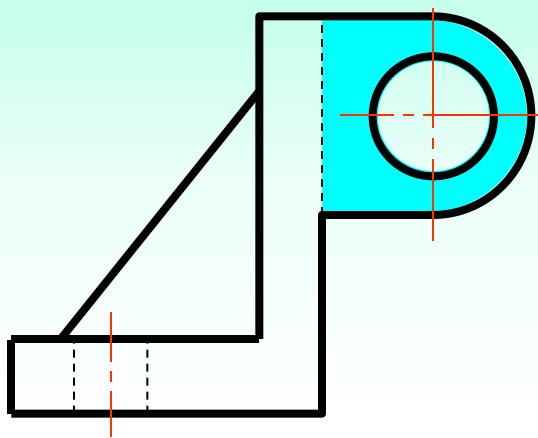
分线框想形体 — 底板



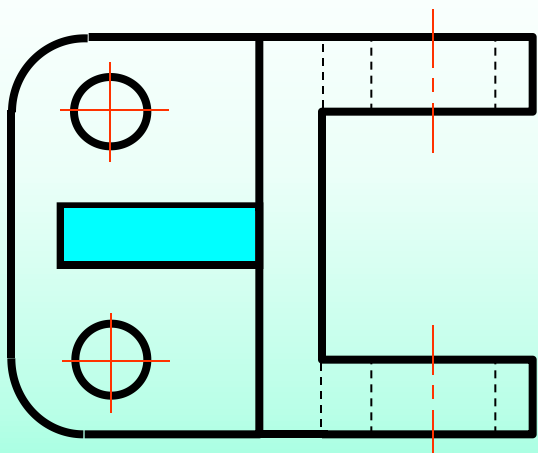
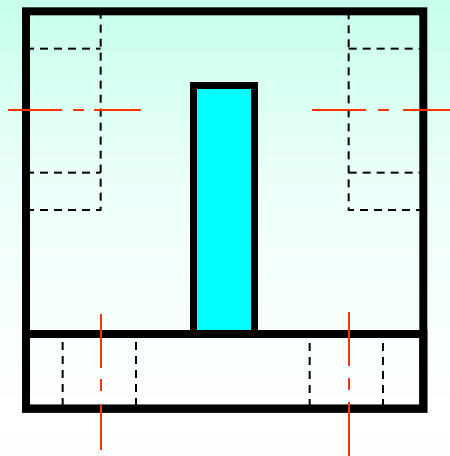
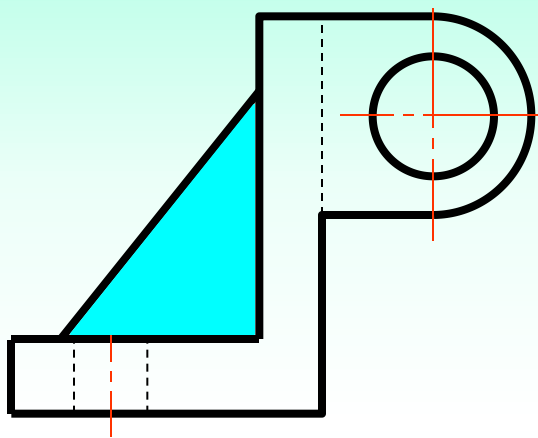
分线框想形体—立板



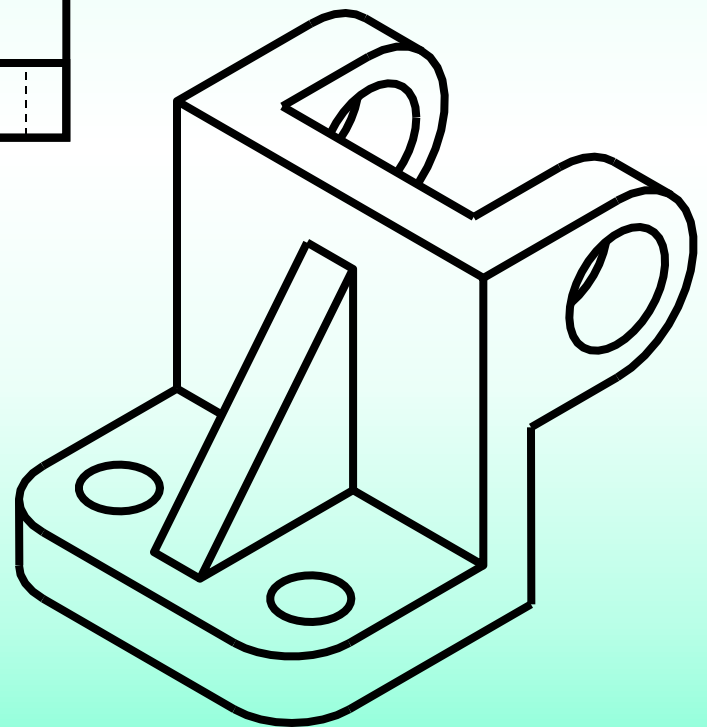
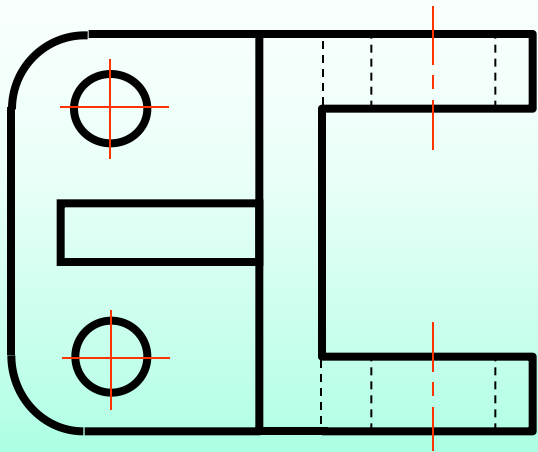
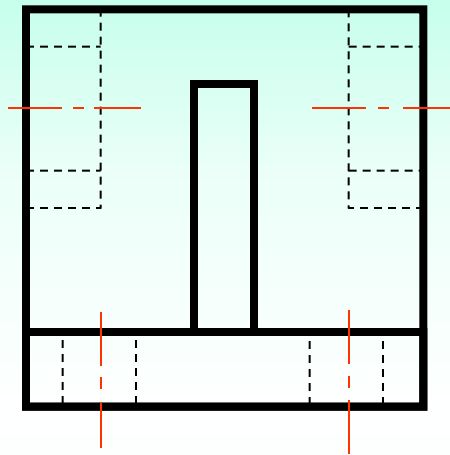
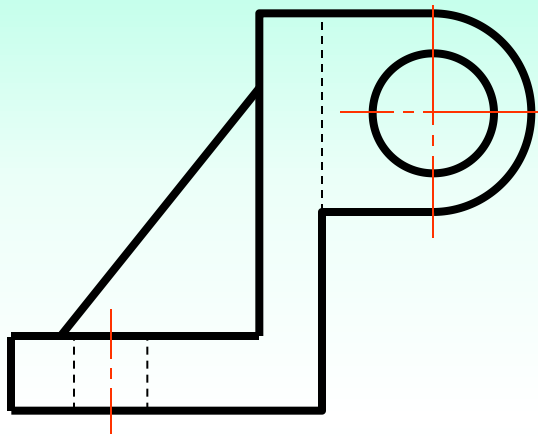
分线框想形体—耳板



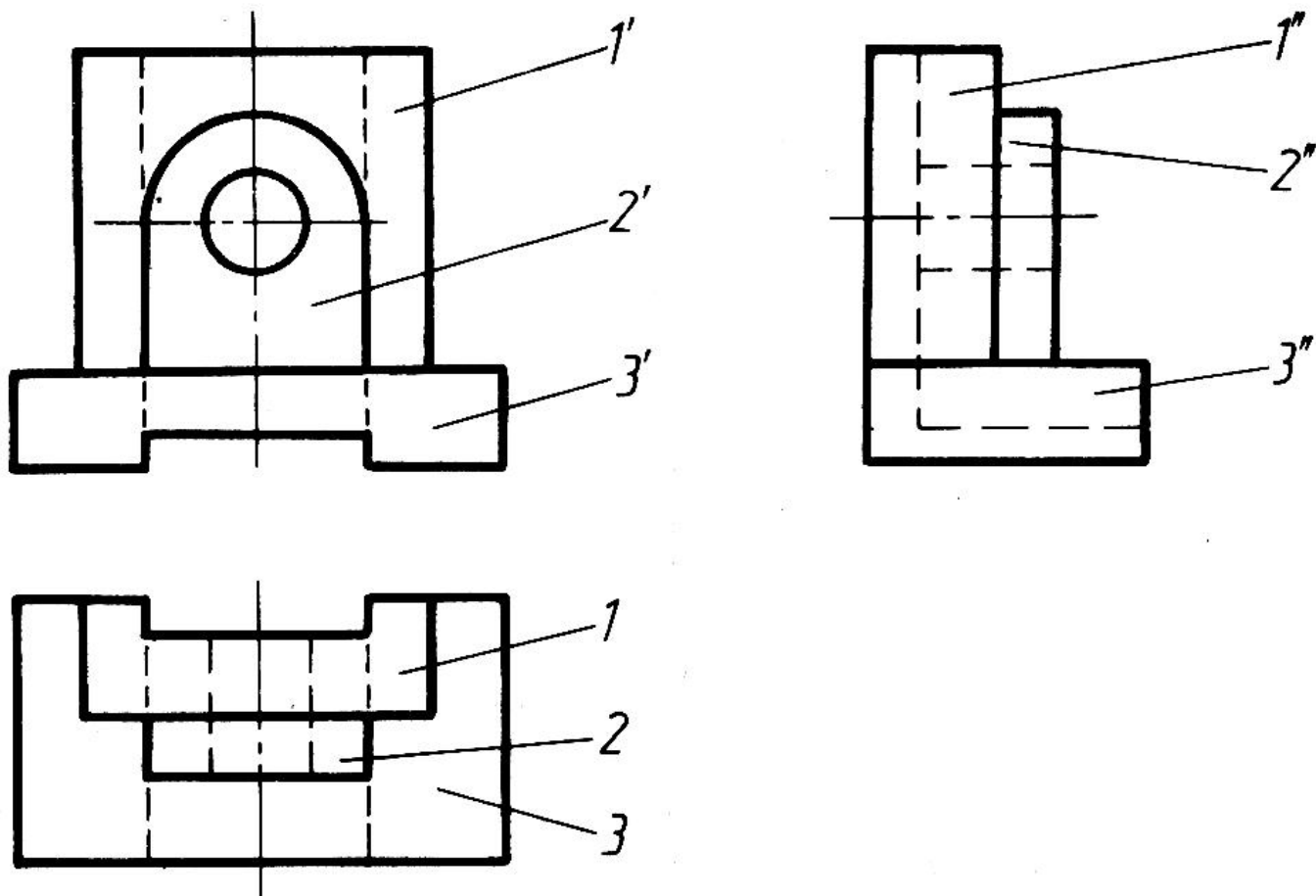
分线框想形体—肋板



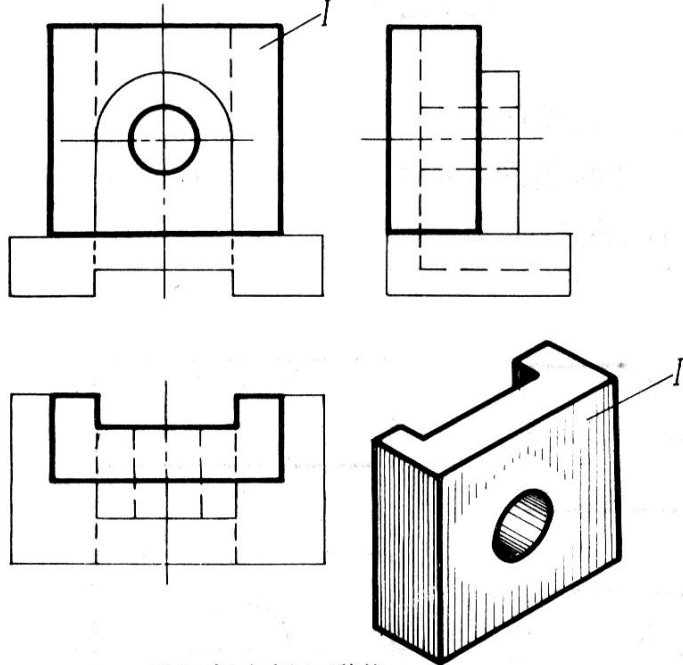
综合起来想整体



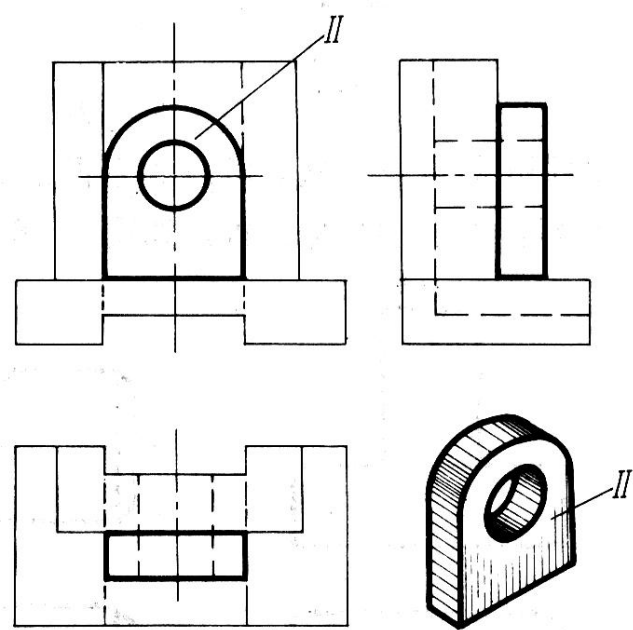
例5:



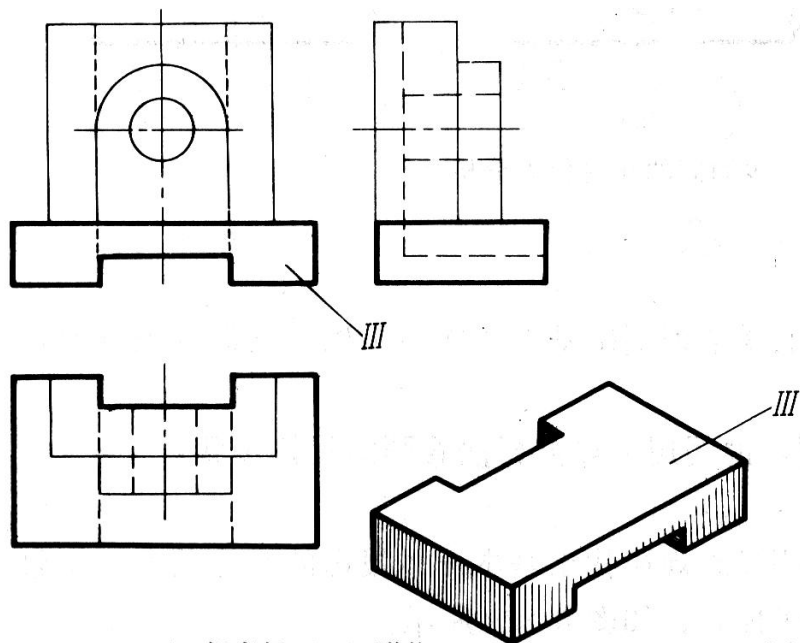
(a) 分线框对投影



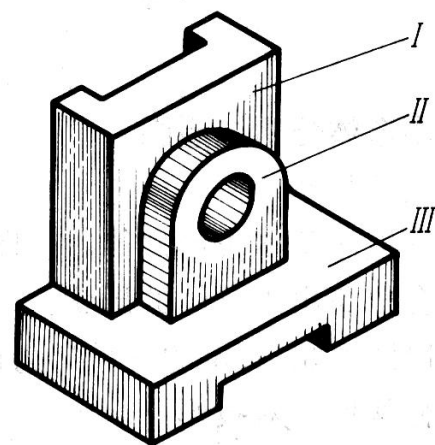
(b) 想立板 I 形状



(c) 想凸台 (II) 形状

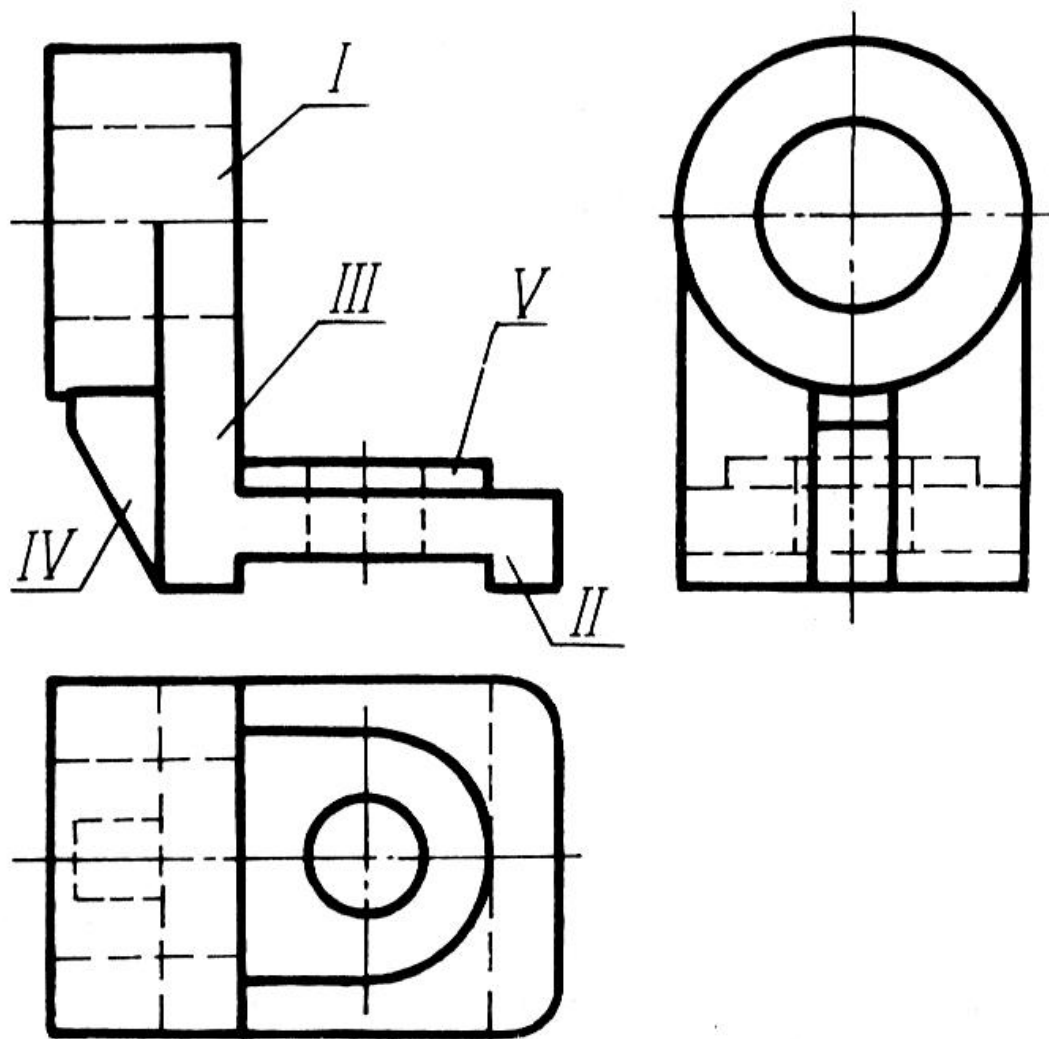


(d) 想底板 (III) 形状

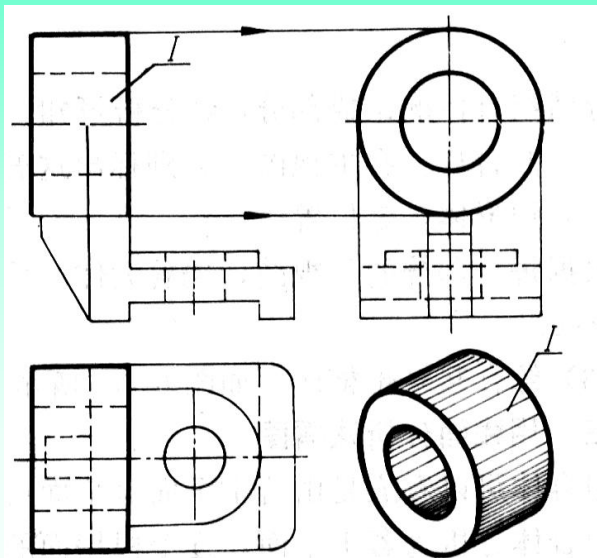


(e) 综合想象支承架整体形状

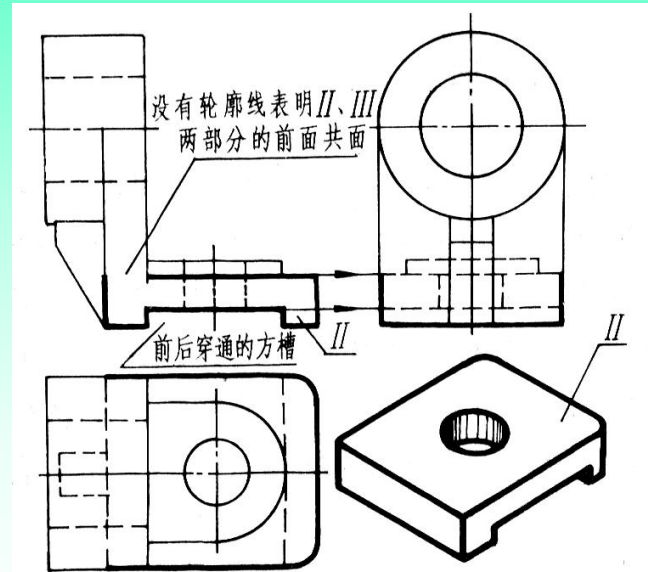
例6:



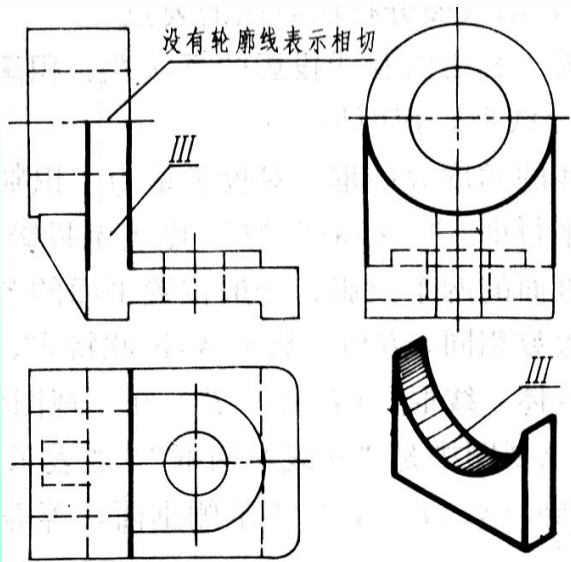
(a) 分线框 (分形体)



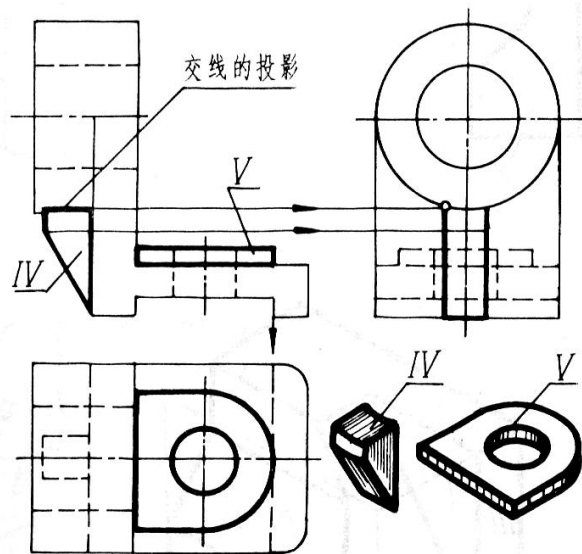
(b) 想圆筒 (I) 形状



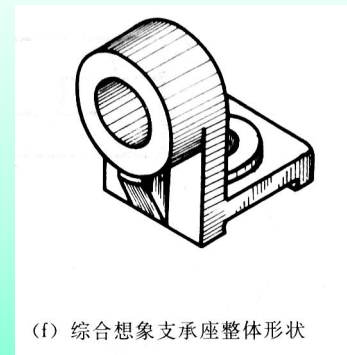
(c) 想底板 (II) 形状



(d) 想支承板 (III) 形状

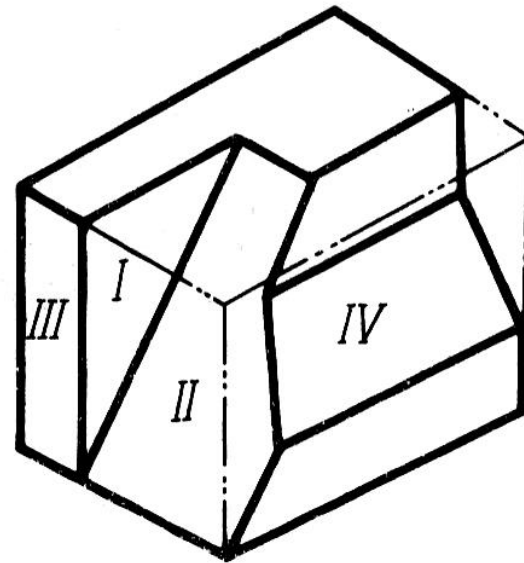
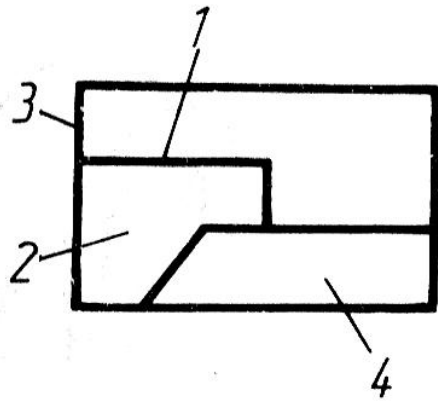
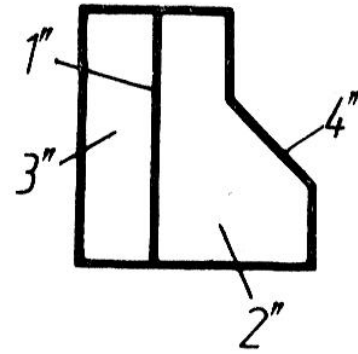
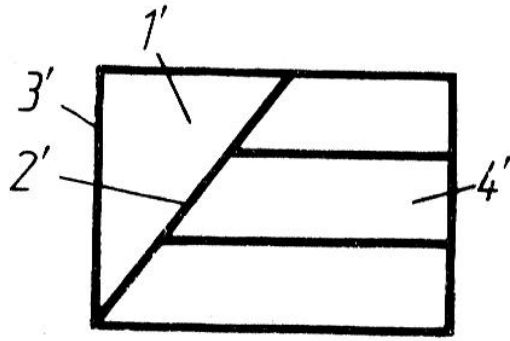


(e) 想肋板 (IV) 和凸台 (V) 形状



(f) 综合想象支承座整体形状

例7:



小结:

- (1) 形体分析法和面形分析法两者的读图步骤虽然相似，但**形体分析法是从体的角度出发**，划分视图所得的三个投影是一个形体的投影；而**面形分析法是从面的角度出发**，“分线框对投影”所得的三个投影是一个面的投影。
- (2) 形体分析法较适合于以叠加方式形成的组合体，面形分析法较适合于以切割方式形成的组合体。
由于组合体的组合方式往往既有叠加又有切割，所以看图时一般不是独立地采用某种方法，而是两者综合使用，互相配合，互相补充。

三、已知两视图，求作第三视图。

1. 由已知视图看懂物体的形状

----分析投影，想象出物体的形状。

2. 根据投影规律及“三等”关系，画出第三视图

(一) 投影分析

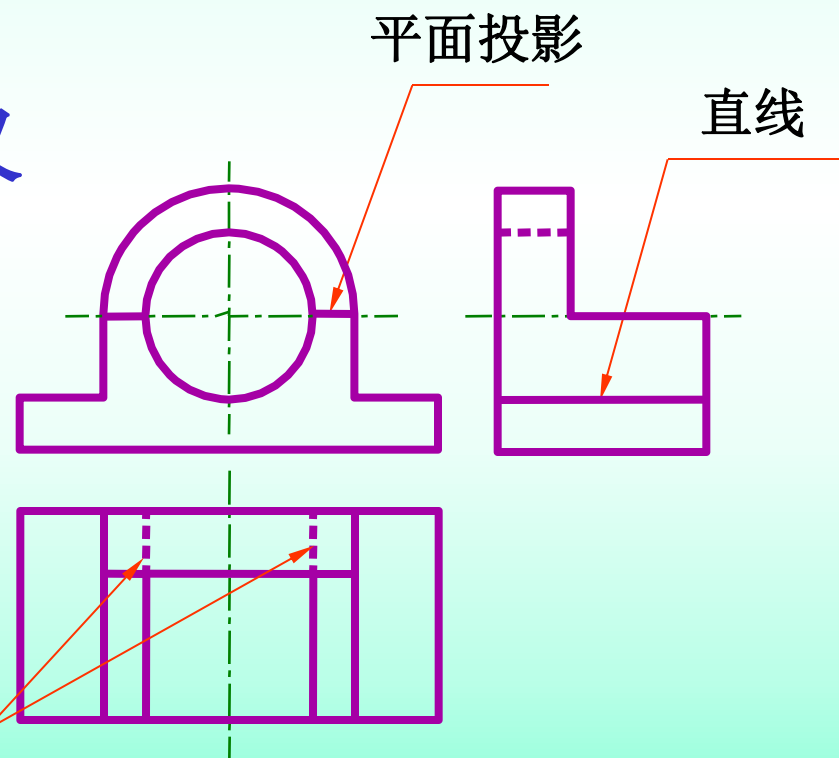
1. 弄清视图上图线的意义

① 一个平面的投影

② 面与面的交线

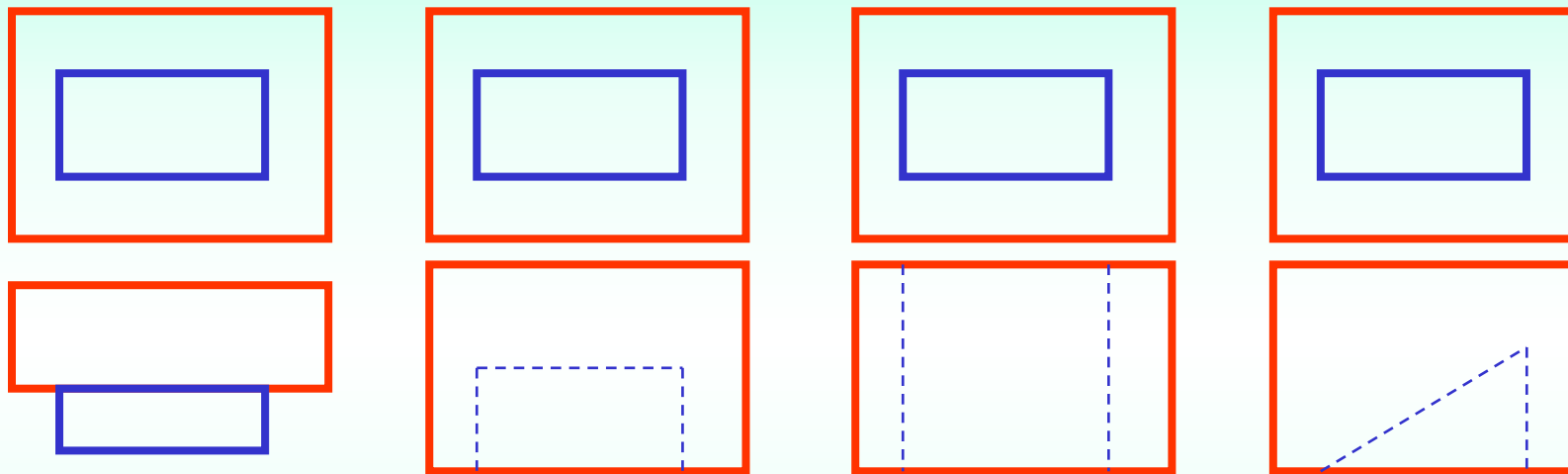
③ 回转体轮廓素线的投影

圆柱轮廓素线

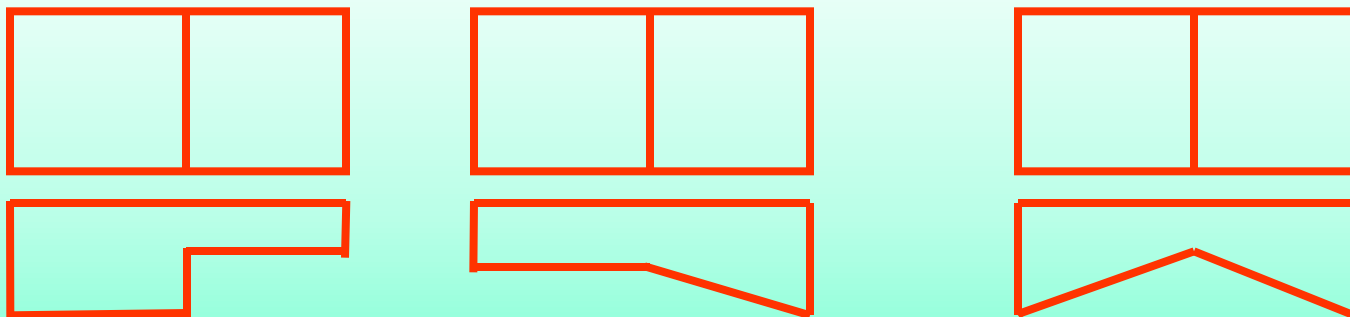


2. 利用线框，分析表面相对位置关系。

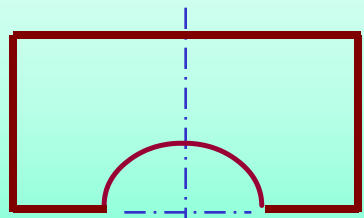
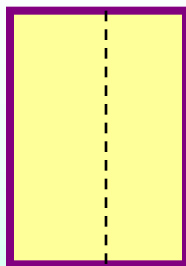
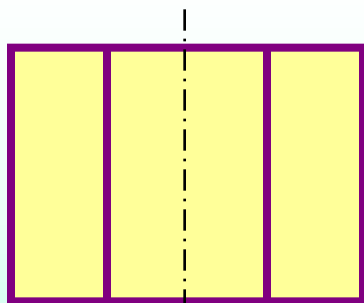
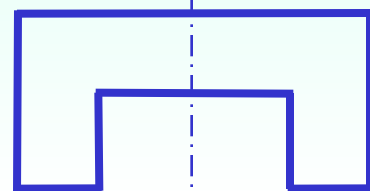
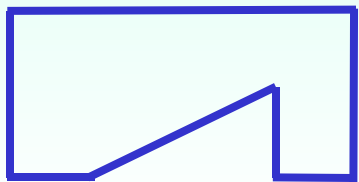
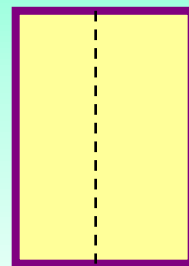
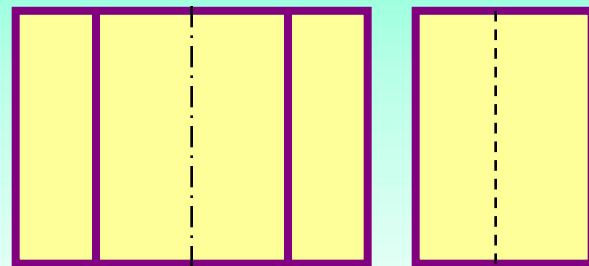
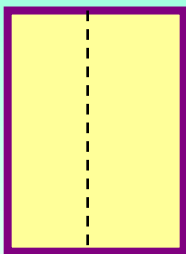
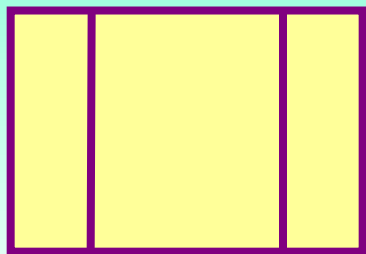
视图中一个**封闭线框**一般情况下表示一个面的投影，
线框套线框，则可能有一个面是凸出的、凹下的、倾斜的，
或者是具有打通的孔。



两个线框相连，表示两个面高低不平或相交。

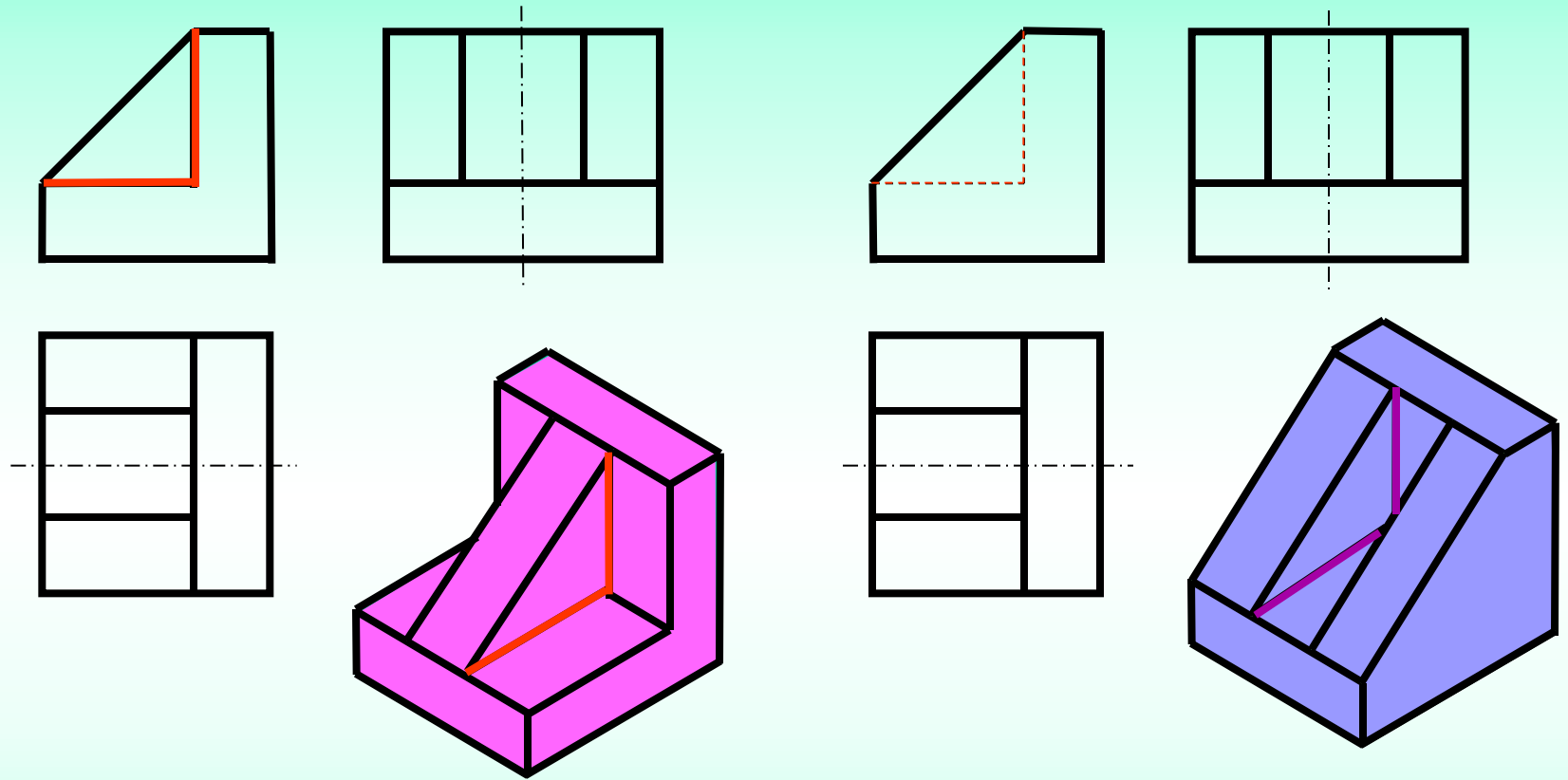


3. 将几个视图联系起来看，确定物体的形状。



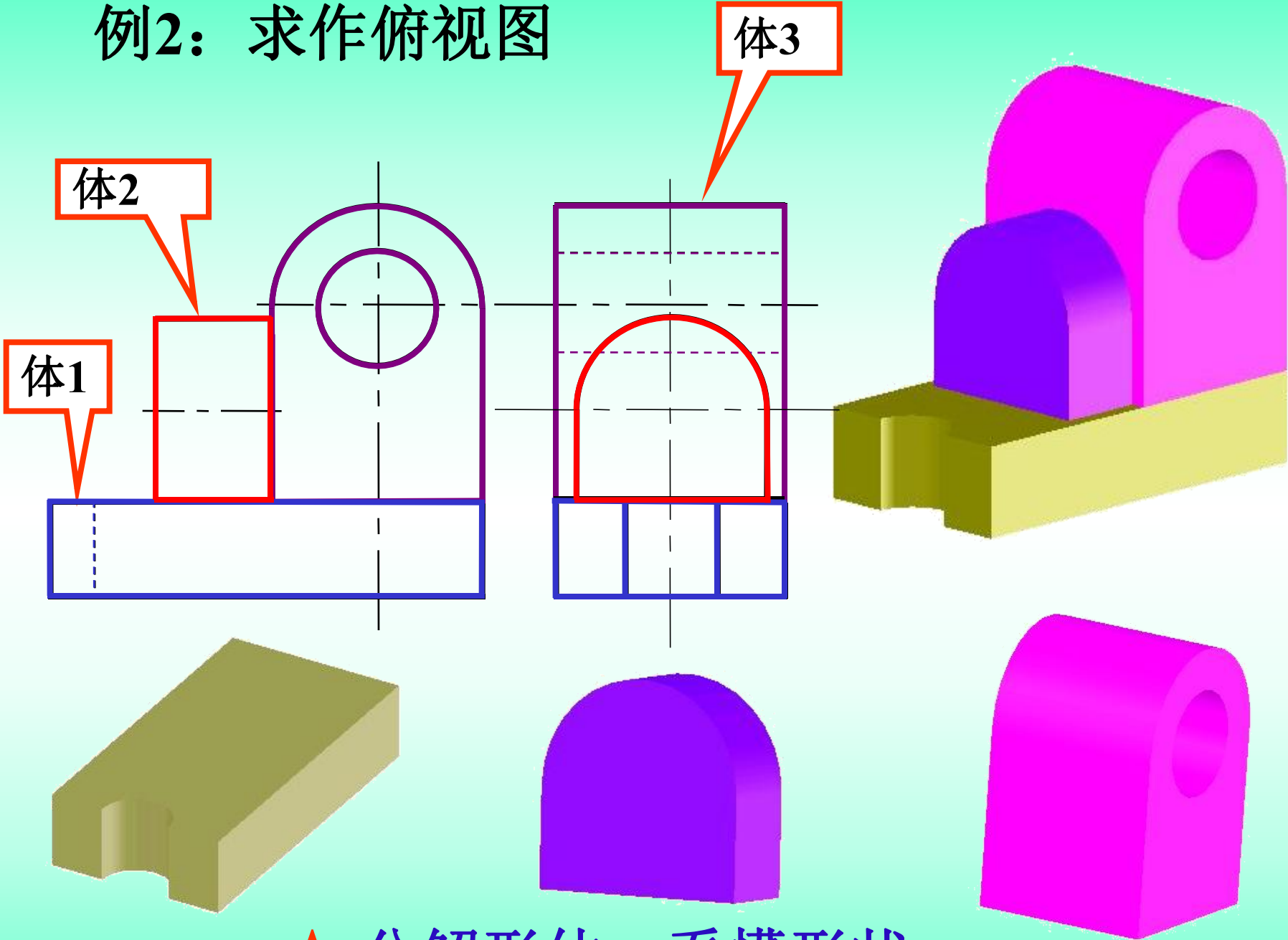
一个视图不能唯一确定物体的形状，往往需要两个或两个以上的视图才能唯一确定物体的形状。

4. 注意图中虚实线变化，区分不同形体。

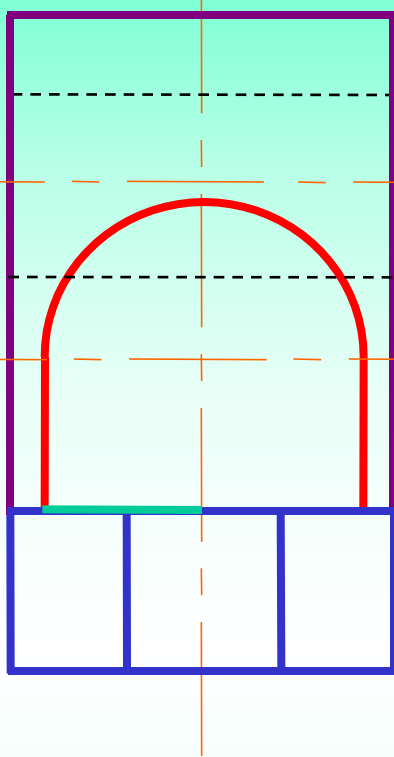
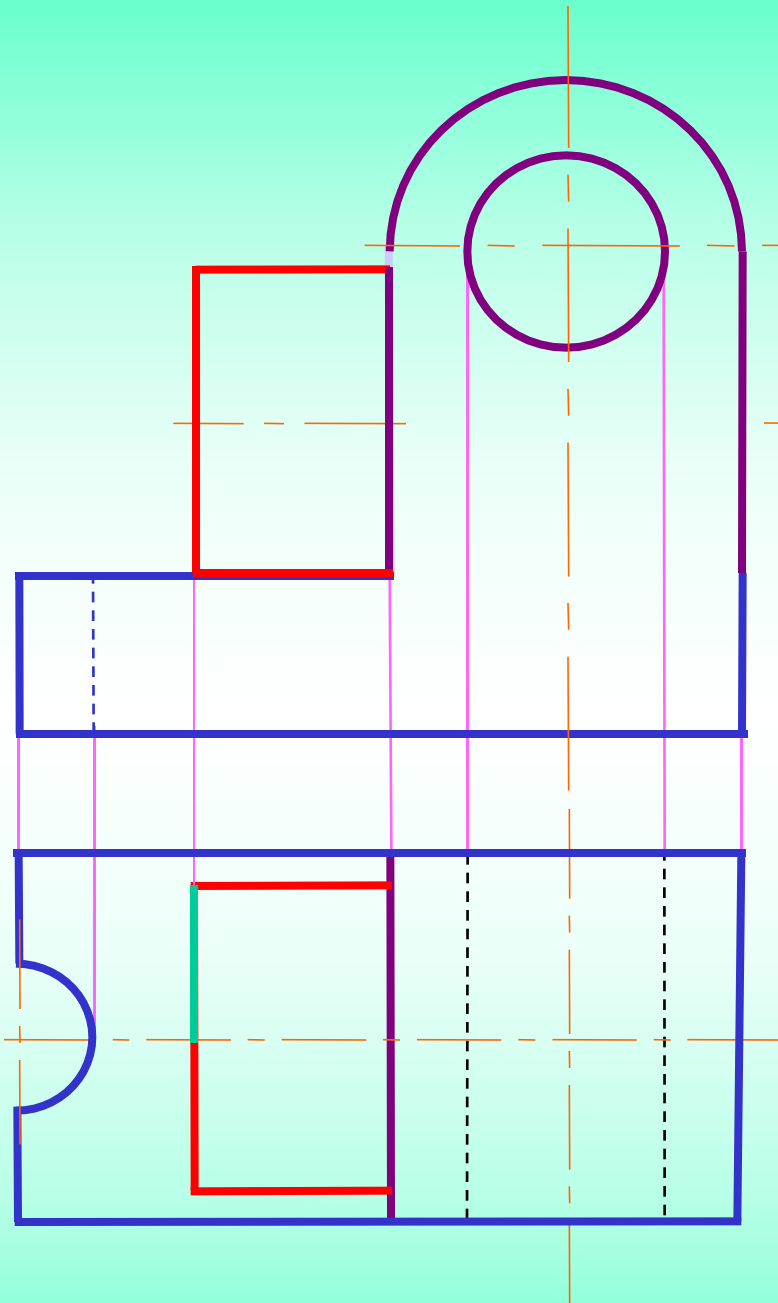


虽然三个视图基本相同，但由于主视图中虚实线各异，而得出两种不同的形体。

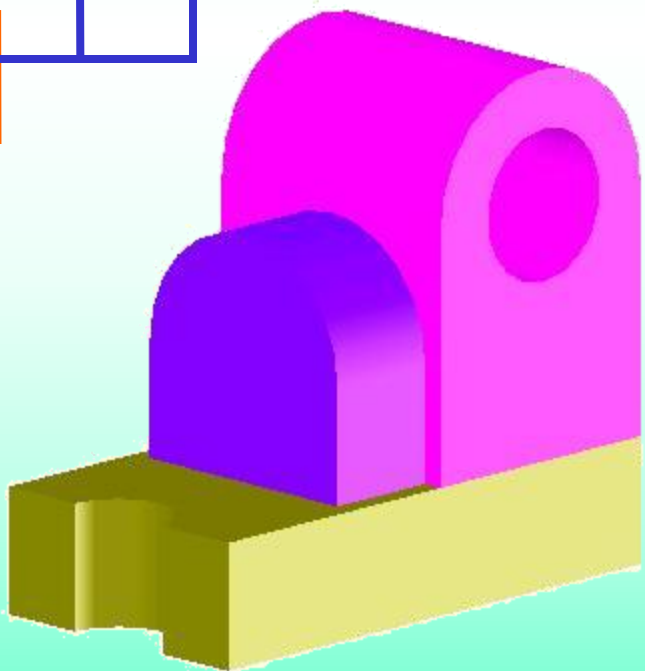
例2：求作俯视图



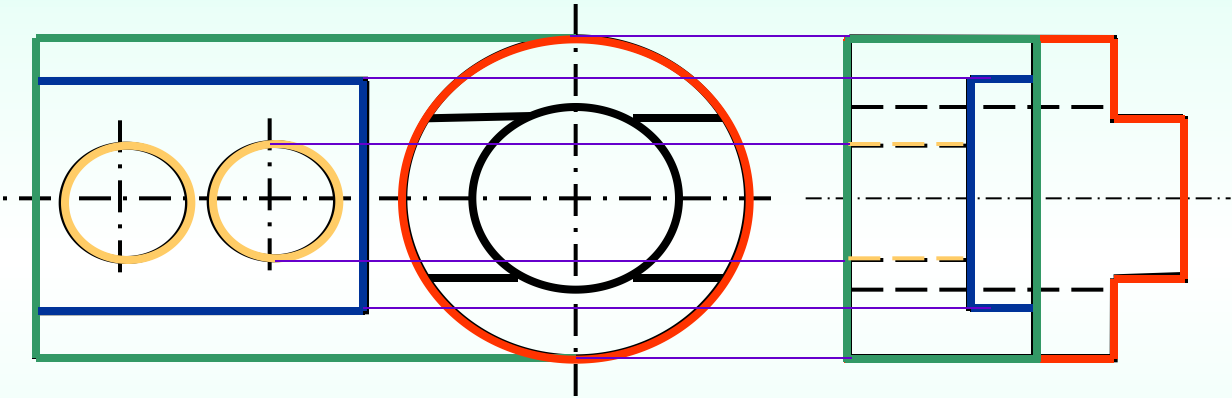
★ 分解形体，看懂形状。



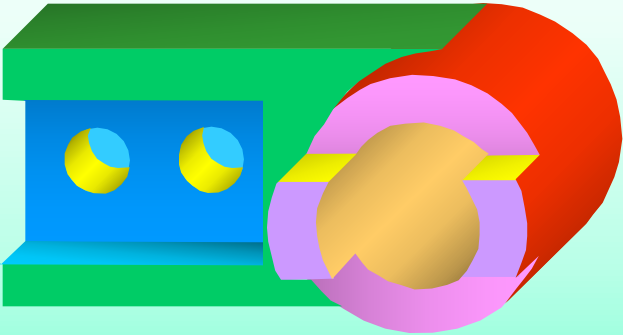
- 形体分析
- 线面分析



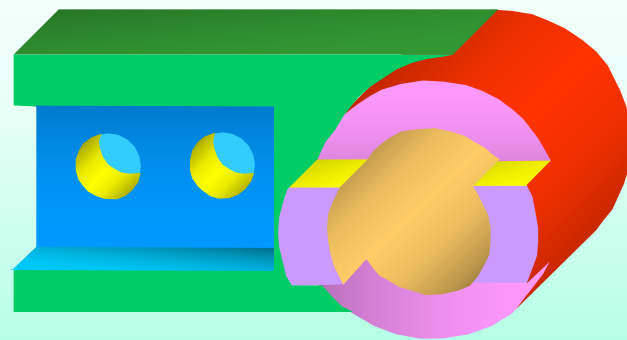
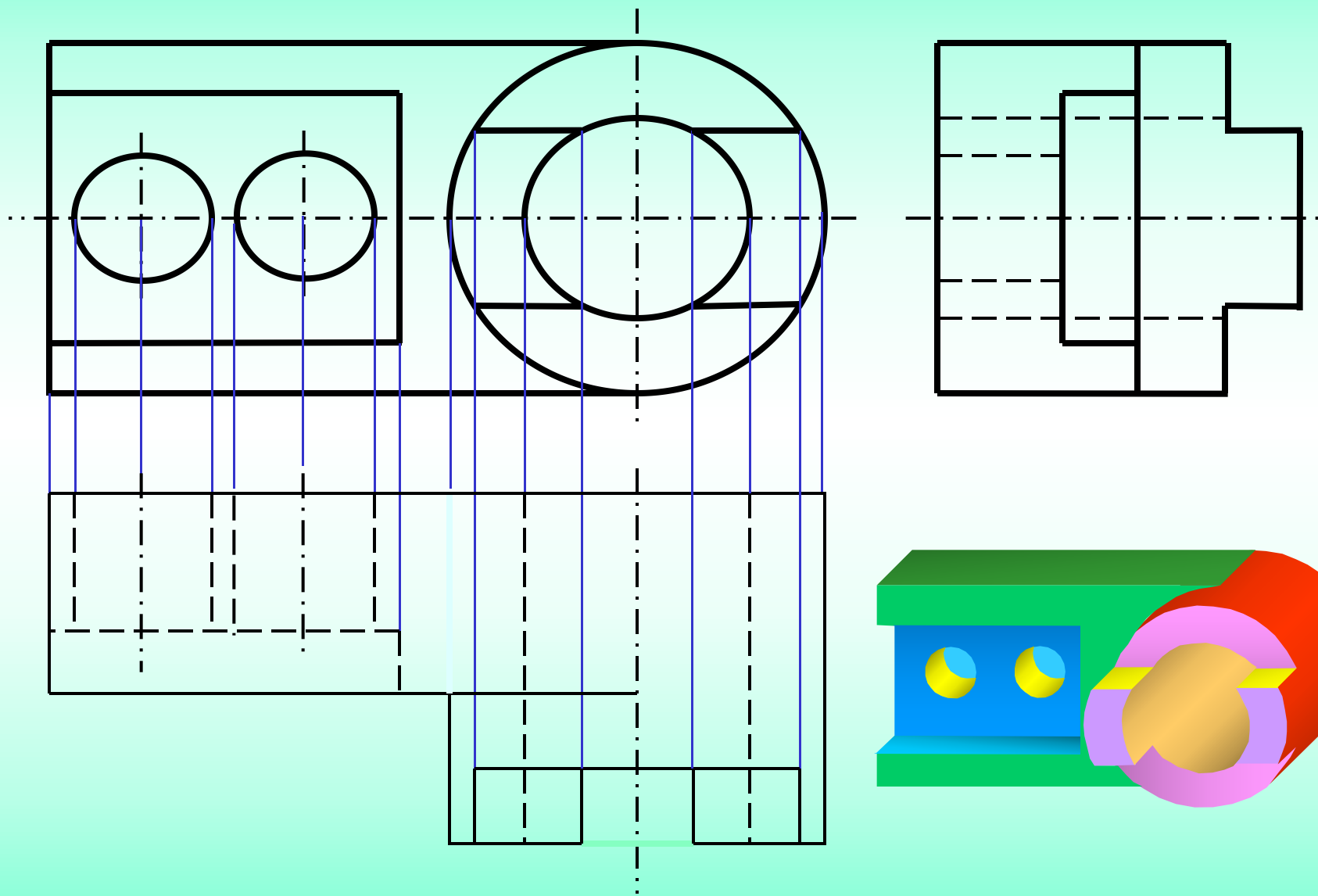
例1：求作俯视图



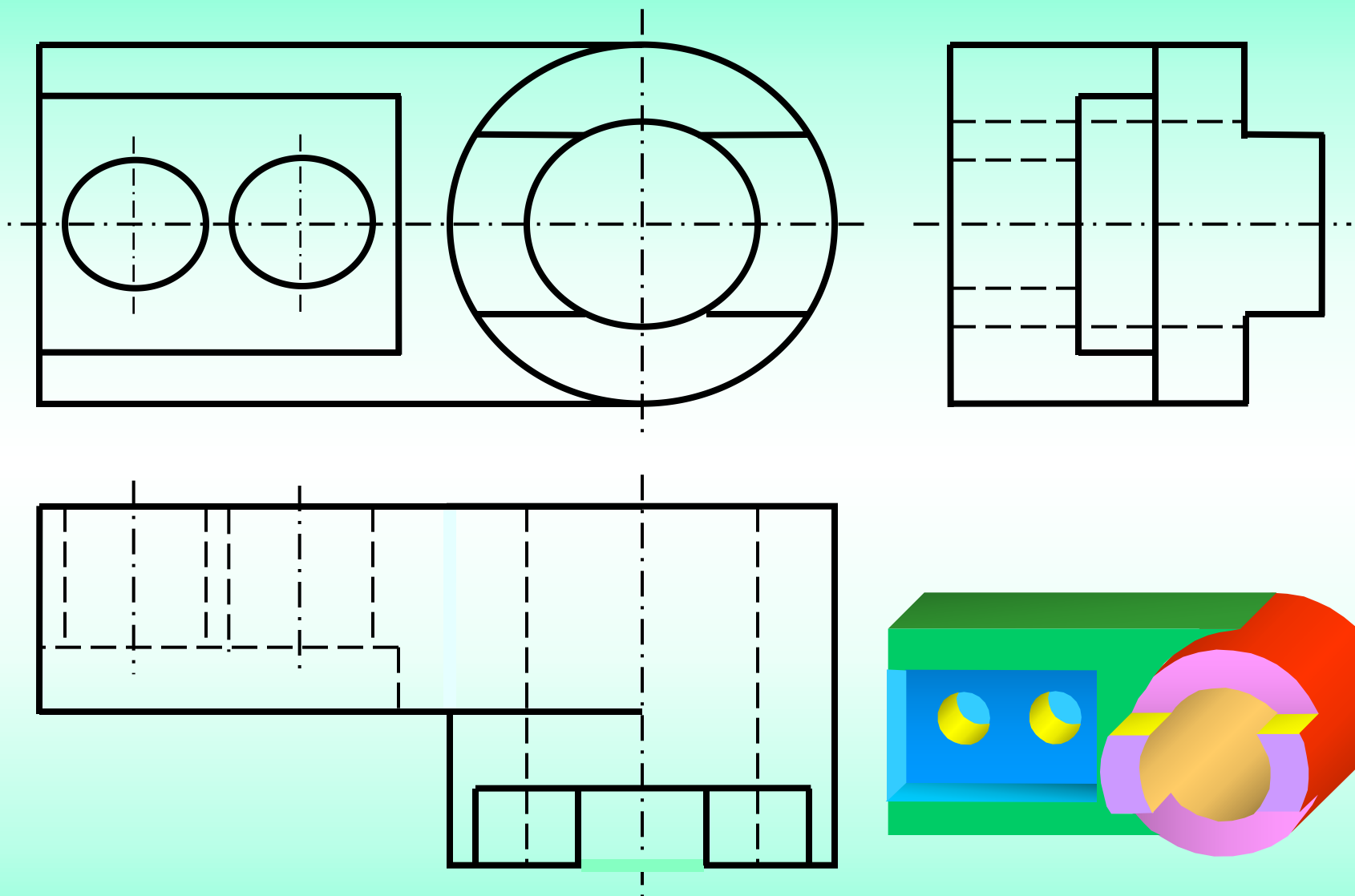
利用局部
孔和槽分
解形体



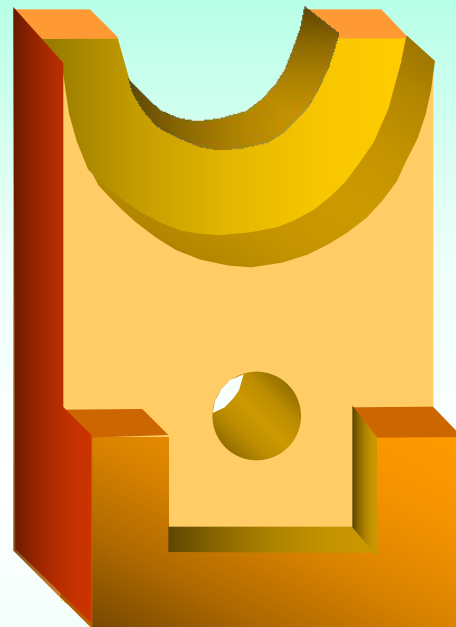
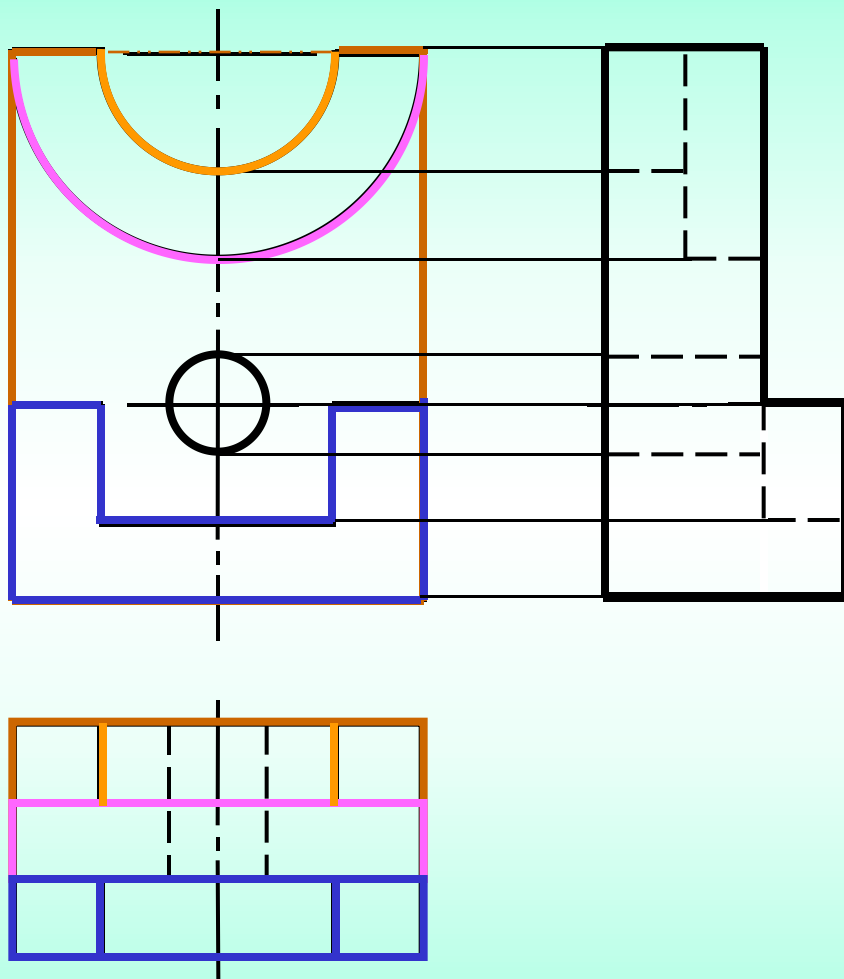
例1：求作俯视图



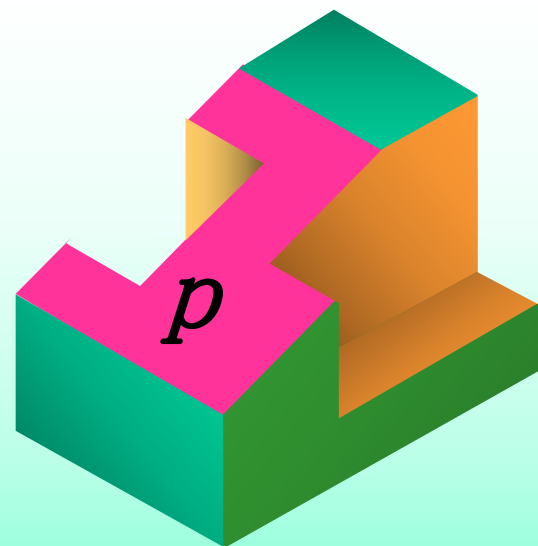
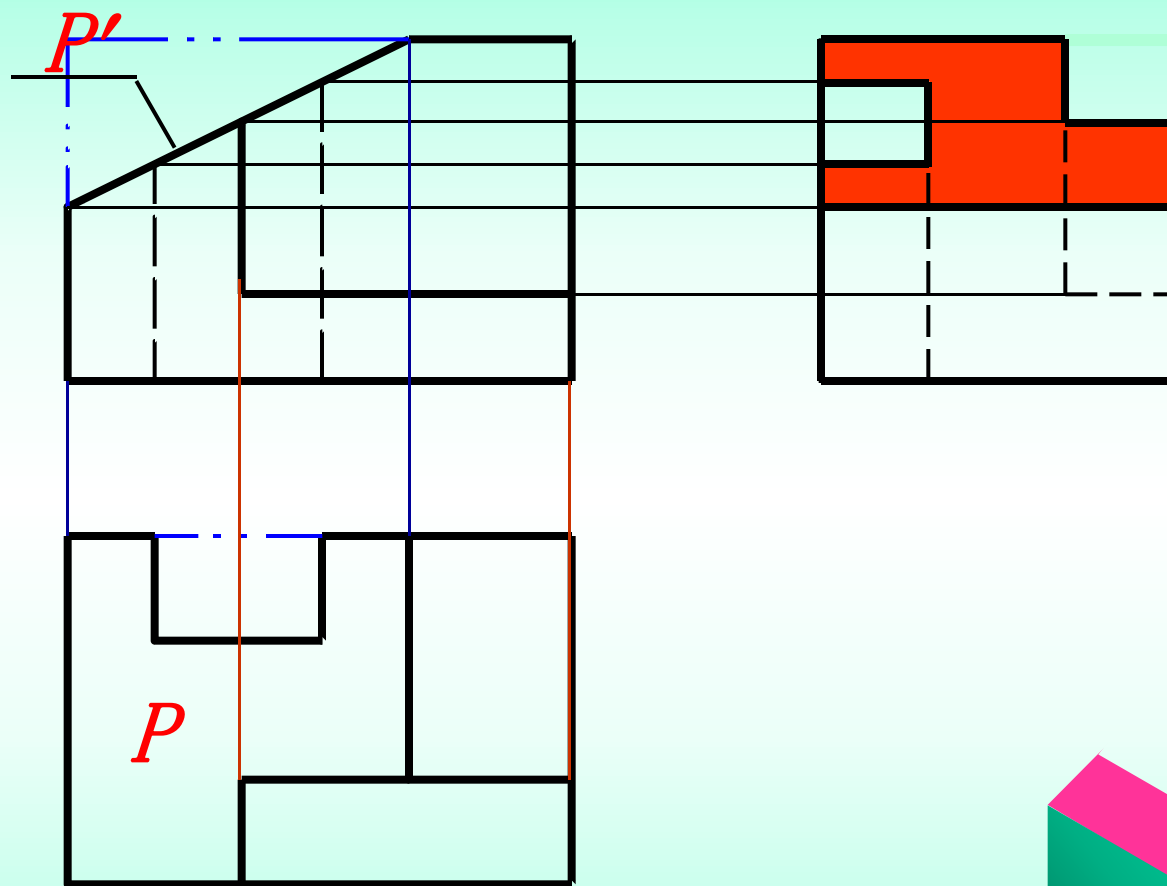
例1：求作俯视图



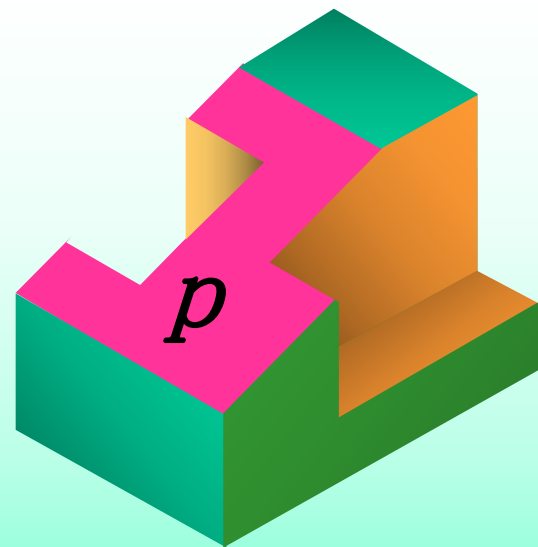
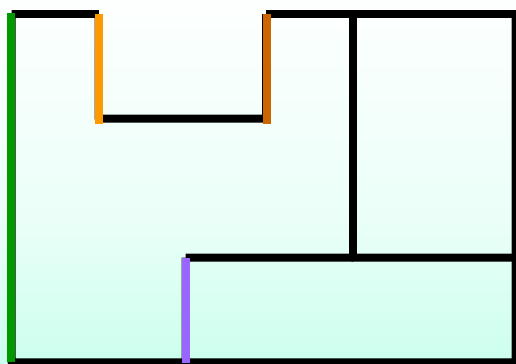
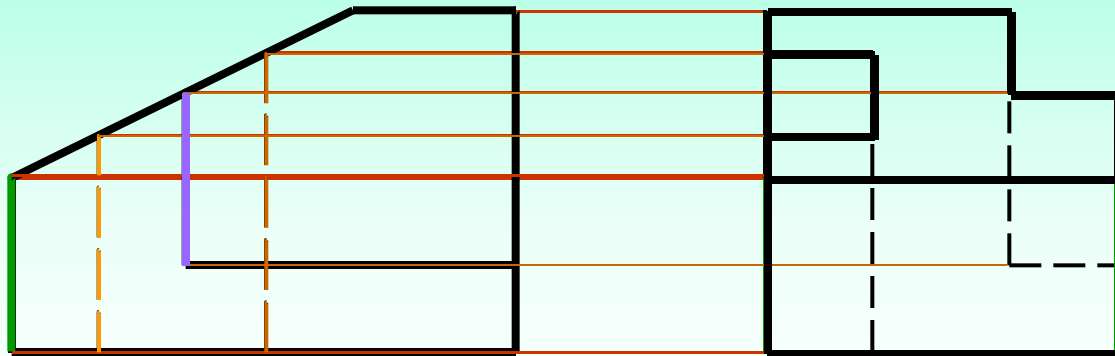
例2：求作左视图



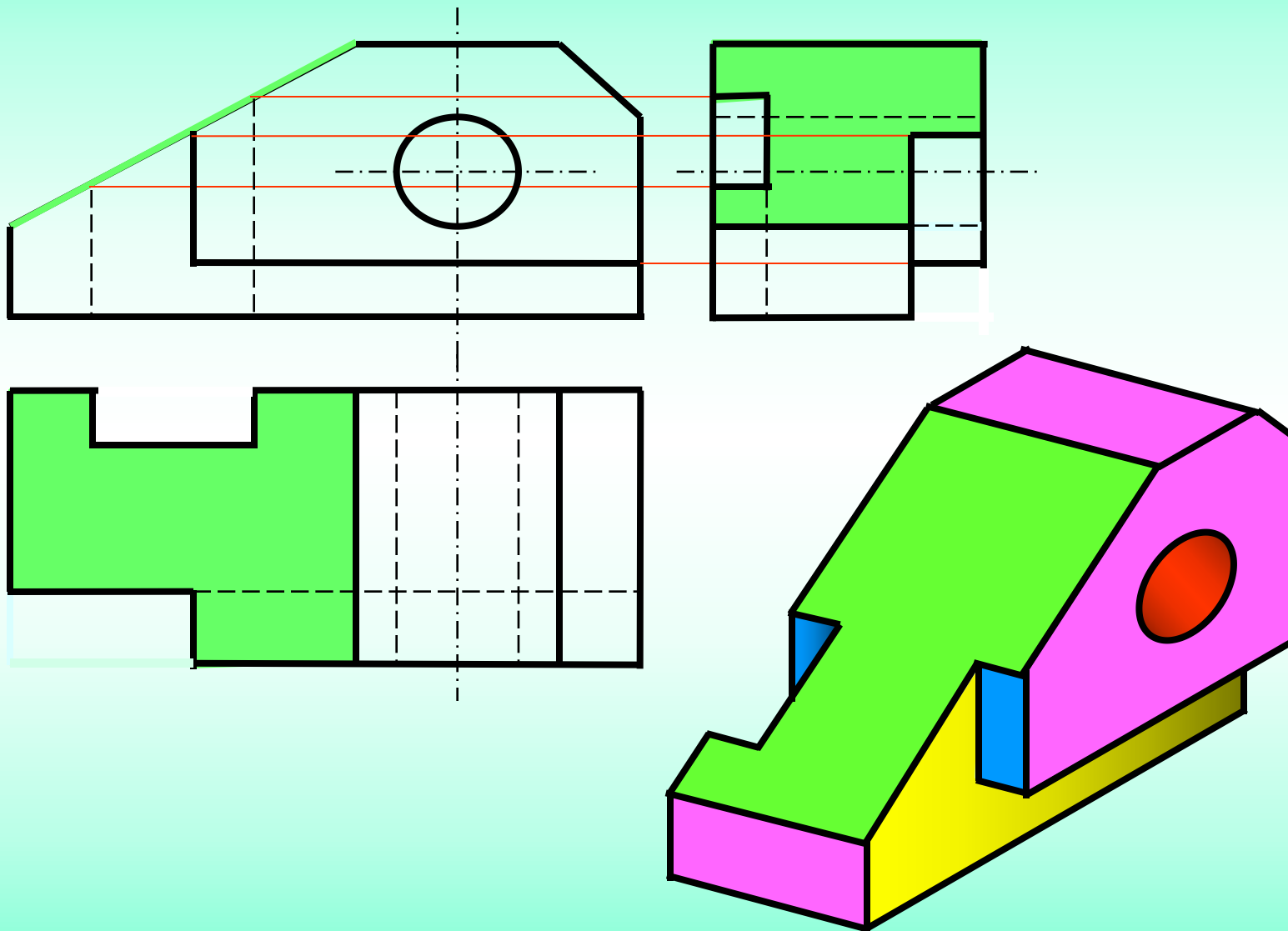
例3：求作左视图



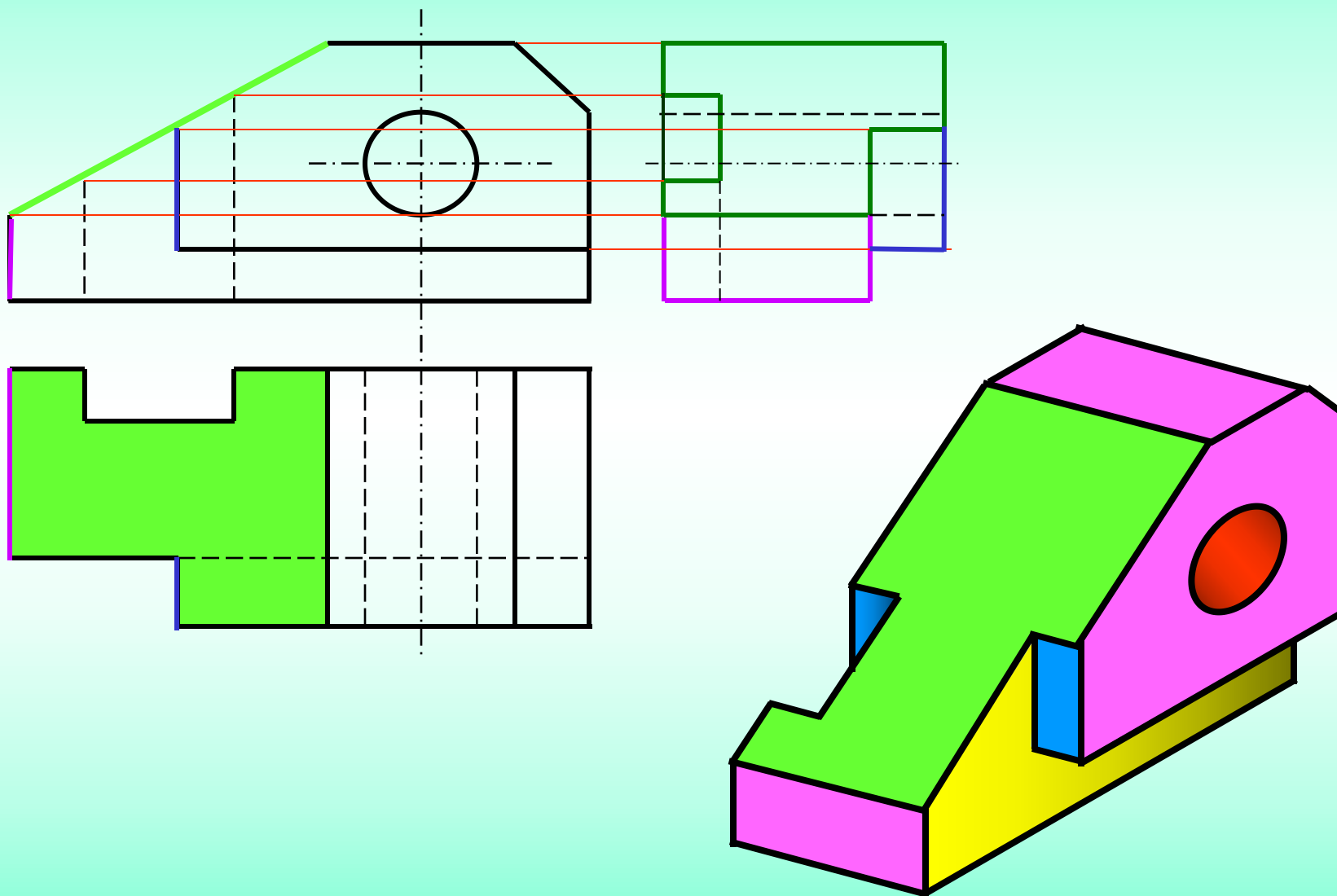
例3：求作左视图



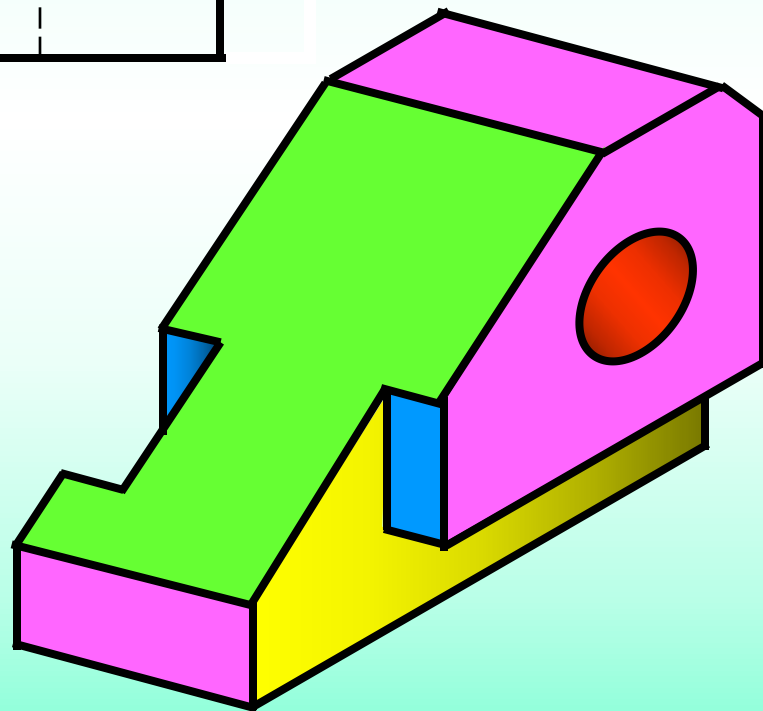
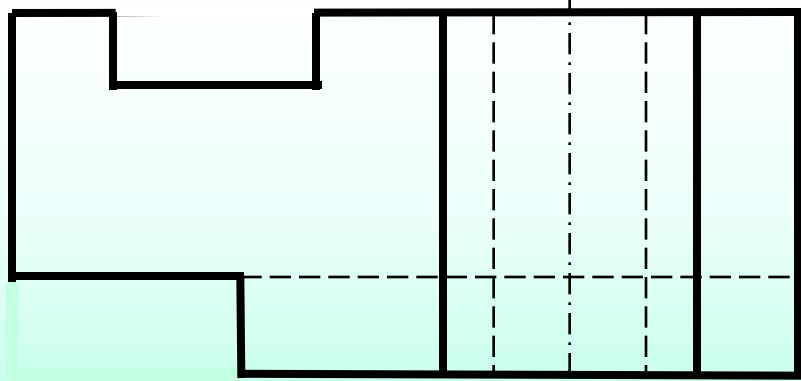
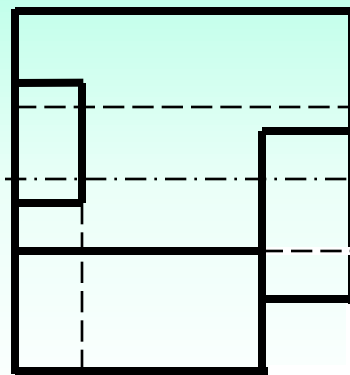
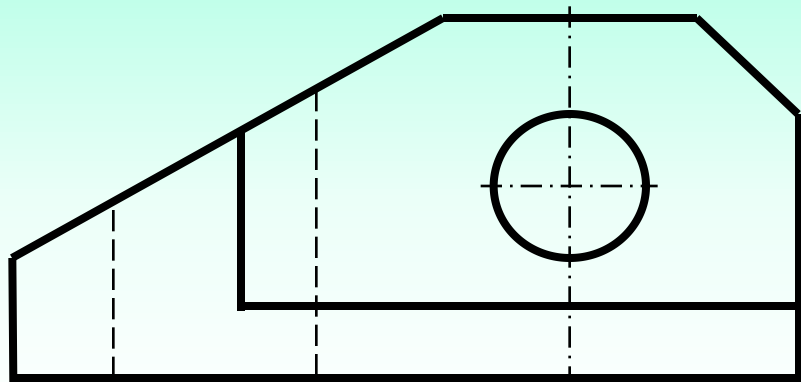
例 2：已知物体的主视图和俯视图，求侧视图。



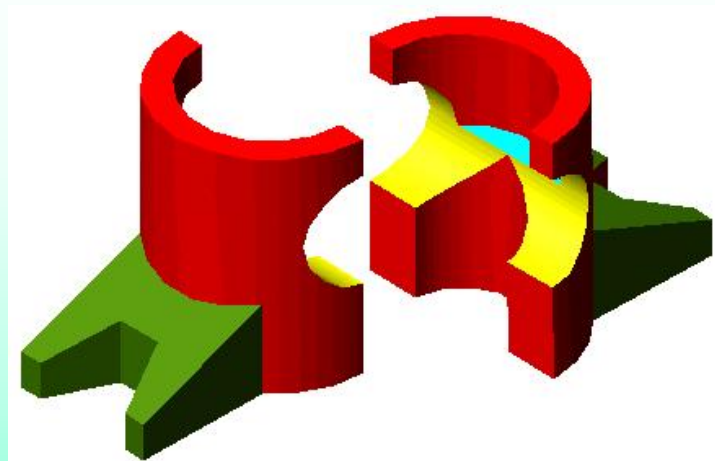
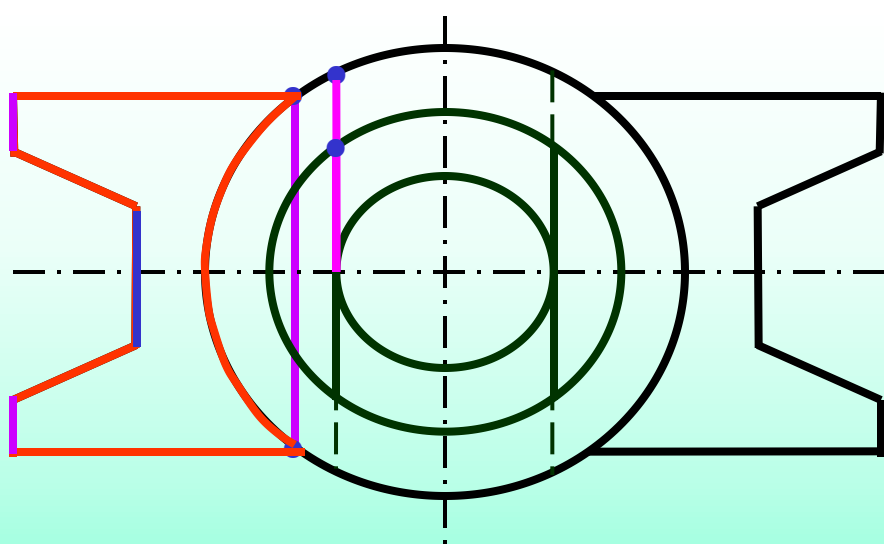
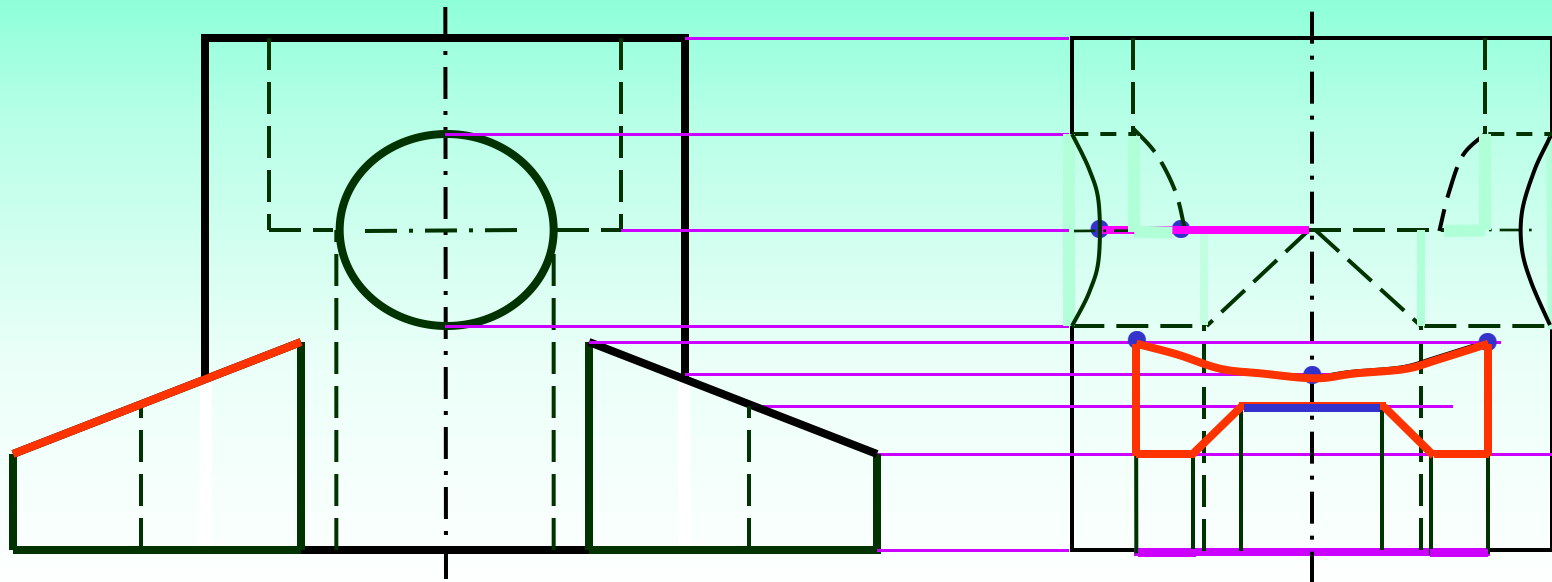
例2：已知物体的主视图和俯视图，求侧视图。



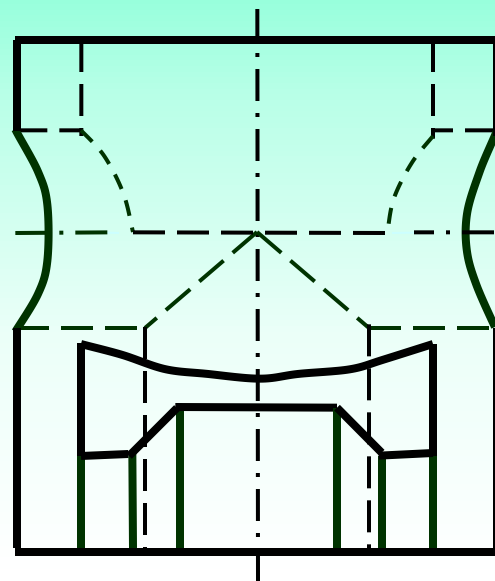
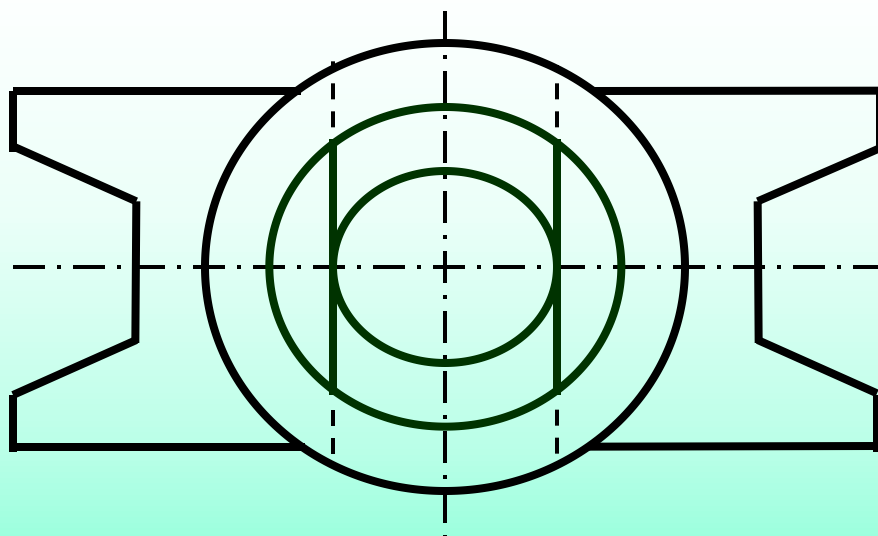
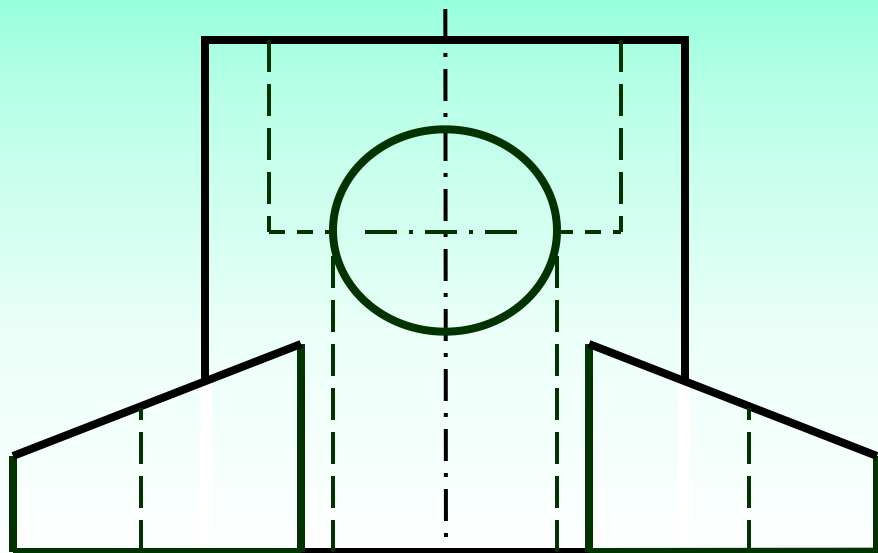
例 2： 已知物体的主视图和俯视图， 求侧视图。



例4：求作左视图



例4：求作左视图



⌘ 小结 ⌘

- 一、**形体分析法**是组合体的画图、读图和尺寸标注的一种行之有效的**基本方法**，要很好掌握。组成形式及表面过渡关系。
- 二、画图时，一定要在形体分析的基础上“**分块逐块画**”，要注意分析形体之间的组合方式及表面过渡关系，避免发生多线和漏线。
- 三、对于用切割方法形成的组合体，有时需借助面形分析方法进一步分析表面的形状特征及投影特性，以便准确地想象出物体的形状和正确地画出图形。